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Wisconsin Group Shipments Set Up Record

Pooled Carloads of Paper and Paper Products Totaling 2,781 Shipped By Wisconsin Paper Group To 252 Cities In 42 States In 1940 — John Strange Paper Co. Adds To Storage — Other News.

APPLETON, Wis., January 20, 1941—Shipment of 2,781 pool carloads of paper and paper products to 252 cities in 42 states and Washington, D. C., during the year 1940 set a new high record for the Wisconsin Paper Group, with offices at Menasha, Wis. This was revealed in the report of Irwin Pearson, executive secretary, at the annual meeting following a luncheon Saturday noon, January 11, at the Valley Inn, Neenah, Wis. Fifty-two executives representing 19 of the 29 member mills attended.

Because of this greater demand for pool carload freight delivery on l.c.l. shipments, the regularly scheduled service has been increased for 1941.

E. C. Hilfert, general manager of Riverside Paper Corporation, Appleton, Wis., president, was the presiding officer. Reports were given by Leo A. Schubart, Neenah Paper Company, secretary-treasurer, Henry C. Krueger, Neenah, Wis., chairman of the traffic committee, and E. S. Colvin, Appleton Coated Paper Company, Appleton, Wis., chairman of the advertising committee.

R. J. Sund Elected President

R. J. Sund, Menasha Products division of the Marathon Paper Mills Company, Menasha, Wis., was elected president. J. D. Young, was elected to the executive committee, succeeding W. K. Gerbrick, Central Paper Company, Menasha, Wis., who had served for six years, one of them as president.

All of the remaining officers and members of the executive committee were reelected as follows: W. K. Austin, Kimberly-Clark Corporation, Neenah, Wis., vice-president; Mr. Schubart, secretary-treasurer; Mr. Pearson, executive secretary, a position he has held for the last seven years; A. C. Remley, Nekoosa-Edwards Paper Company, Port Edwards, Wis.; E. H. Jennings, Thilmany Pulp and Paper Company, Kaukauna, Wis.; A. J. Schierl, Whiting-Plover Paper Company, Stevens Point, Wis.; C. W. Hoeper, Badger Paper Mills, Inc., Peshtigo, Wis.; H. D. Wake, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., and Leonard Kuehl, Flambeau Paper Company, Park Falls, Wis. Mr. Hilfert as retiring president, automatically remains on the committee for one additional year.

John Strange Co. to Enlarge Storage

The John Strange Paper Company, Menasha, Wis., has awarded a contract to Fluor Brothers Construction Company, Oshkosh, Wis., to convert buildings recently purchased from the Menasha Wooden Ware Corporation into storage facilities. Some of the buildings will be razed and others will be remodelled or rebuilt, according to Hugh Strange, Sr., secretary-treasurer. When the project is completed, approximately 100,000 square feet of space will be available for storage of completed products, a need long felt by the company. The land and buildings purchased are east of the mill.

Mill Branches Subject to New Tax

Paper mills operating branches in Wisconsin will be obliged to pay taxes on dividends under a new law enacted by the Wisconsin Legislature. An opinion was rendered by the United States Supreme Court holding the law constitutional, and a later petition to reconsider the decision was denied last week.

The state imposed a tax of 2½ per cent upon corporate dividends paid out of income derived from earnings in Wisconsin. The amount taxed is determined by the ratio between Wisconsin earnings and total earnings throughout the United States.

A. B. Hansen Talks on Defense

Speaking on "Industry and National Defense" at a meeting of the Neenah club, Neenah, Wis., Monday, January 13, A. B. Hansen, executive vice-president of the Northern Paper Mills, Green Bay, Wis., declared the nation with superior industry will be supreme in the present conflict. Industrial capacity exceeds that of Germany, Italy and Japan and is two and a half times that of Germany, including all Nazi conquered territory, he said.

"To help make sure that other research problems will be solved," said the speaker, "The National As-

(Continued on page 26)

Abitibi Lost Sales Under Prorating Plan

Evidence Presented By Receiver of Abitibi Power & Paper Co. Indicates Disregard of Prorating Regulations Was Harmful To Company — Important Newsprint Contracts Lost Not Regained.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., January 20, 1941—An increasing disregard for the provisions of the prorating regulations in Ontario and Quebec had no small part in placing the great Abitibi Power and Paper Company in its present unsatisfactory position, according to evidence presented to the Royal Commission investigating its affairs, by G. T. Clarkson, receiver and manager, towards the close of the public hearings. The company went into receivership in 1932 and has not been able to extricate itself, notwithstanding expert management under the receiver.

As stated on this page last week, Mr. Clarkson told the commission that the provisions of the prorating system were being disregarded in both Ontario and Quebec and that the whole system seemed in danger of disintegration, which would throw the industry right back into its former state of unprofitable competition. We are now able to give some of the details of Mr. Clarkson's evidence before the commission.

Abitibi Loses Under Proration Plan

Sketching the history of proration in these two provinces, Mr. Clarkson pointed out that in its initial year, 1936, difficulties were experienced, but "nevertheless there was a quite substantial distribution of tonnage". Abnormal demand and prices made proration no problem in 1937, but "when 1938 came around Quebec enforced proration, but it was not fully enforced in Ontario. That weakened it. In that year Abitibi had some very large and important contracts expiring in the United States, and it was notified that it had to adhere to proration, and it did so, and it lost about 75,000 to 100,000 tons of its best contracts and has not got them back. That was the end of 1937. It was promised that if it adhered to the situation any loss of business it might sustain would be made good through proration. In 1938 it failed to receive 13,000 tons that it was entitled to under proration. Another company, a large corporation, was in the same position. In 1939 Quebec enforced proration. In 1939 Abitibi again failed to get about 11,000 tons that it was entitled to because proration was not enforced. At the present time it is not being fully enforced by either Quebec or Ontario; it is being disregarded by a number of companies and is becoming weaker and weaker.

"Further, I think that if proration were to let go and the price of newsprint go down, it would reduce the amount of foreign exchange which Canada needs. I want to emphasize that situation because I feel that this question of proration is a very serious one, a very important one, from the standpoint of the industry."

Publisher-Owned Mills Discussed

Speaking of the publisher-owned mills, Mr. Clarkson was in agreement with those who thought that these mills should not be subject to the proration provisions, but he stated that he thought he was about the only one in the industry who held that view. He mentioned that this exempt group, which was responsible for about 10 per cent of the capacity of the industry, included the Ontario Paper Company with mills at Thorold, Ont., and Baie Comeau, Que., the Spruce Falls Power and Paper Company and Anglo-Canadian Pulp and Paper Company. All of these mills were established before proration came into effect, he said, and, in his opinion, should be exempt from proration, but any publisher establishing a mill since that time should come under the prorating provisions.

In the opinion of Mr. Clarkson, Abitibi would be one of the first mills which would have to go out into the market after business if proration were to disappear. This, apparently, would mean the cutting of prices, something which he admitted is almost impossible to stop once started. With about 30 per cent of the newsprint industry in Canada idle at the present, however, he saw no alternative to price cutting if the proration scheme failed.

The Canadian public awaits with great interest the findings of the Royal Commission, but it is expected that it will take the commissioners some time to compile a suitable set of recommendations for the disposition of Abitibi affairs.

Beaver Wood Fibre Extends Plant

The Beaver Wood Fibre Company, of Thorold, Ont., manufacturers of pulpboard products, is reported to have completed plans for a new storage and distribution building. The cost of the addition, with equipment, is placed at around $80,000.

Look for Active Logging Season

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., January 18, 1941—British Columbia's logging camps will return to big scale production during January unless unexpectedly adverse weather prevails before then, according to the B. C. Loggers' Association.

Many of the operations on Vancouver Island are now at comparatively high elevation and considerable snow has fallen. Heavy rains caused minor damage to roads and bridges, but it is expected that, with the market demand continuing strong the industry will roll up production in impressive volume this year as in 1940.

C. Dewey Anderson, president of the association, looks for another active season in the woods.

"Forest products," declares Mr. Anderson, "are vital war materials. Canada has been called upon to supply unprecedented quantities of timber for war use in Great Britain and other battle areas. These demands and the requirements of our own Canadian armament programme have placed a great load on the productive facilities of the forest industries in British Columbia."

Demand for Paper Improving in Midwest

Sales of All Lines of Paper Reported Expanding With Kraft Leading More Active Market and Paper Board Demand Much Improved—Waste Paper Market Reflects More Activity—Other News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., January 20, 1941—The Chicago paper trade this week found the market firmer. Waste paper conditions again seemed to provide an "index of the raw material situation and the steadiness to increasing strength of mixed papers, news and other lines, added to the more optimistic view now being taken by local paper outlets. Demand was good in virtually all lines with the groundwood interests here indicating that the lead of the kraft groups was rapidly being followed. Sulphites were in splendid demand as inquiries developed during the inventory period and prior to that time developed into orders. Books and covers were benefiting from the "full steam ahead" idea industry is developing as a result of defense developments while newsprints were also reported as more buoyant than for some time past. The board market was very steady with building board indicated as definitely strong. Waste papers were unchanged to any material extent as to price but the undercurrent was said to be definitely improved. No actual price changes upward were reported but there were indications on all sides that the combination of improved demand, taking up of production slack and higher costs of production would soon result in such a movement.

Old Time Printers Meet

Chicago paper men took an active participating interest in the 56th anniversary of the Old Time Printers Association of Chicago which will be celebrated at the annual banquet of its members at the Stevens Hotel on January 18. The dinner is always held on the Saturday nearest to January 17, the birthday of Benjamin Franklin. Eight past presidents of the Association, all well known to the local paper industry, are to participate in the affair.

Contribute to APPMA Drive

Three Illinois companies have contributed to the successful membership drive for industrial affiliates of the American Pulp and Paper Mill Superintendents Association. Of the 45 new members out of a quota of 50 soon to be exceeded, the three Illinois companies are the A. E. Staley Company of Decatur, Ill., the Acme Steel Company, and the Crane Company, both of Chicago.

Power Conference Meets April 9

The Illinois Institute of Technology, recently formed through a merger of the Armour Institute and Lewis Technical Institute, has announced that the 1941 Midwest Power Conference will be held in Chicago on April 9 and 10. It will be of especial interest to executives in power transmission and production and consumption fields. The conference is expected to stimulate a great deal of productive discussion covering central station practices, hydro power, electric power transmission and kindred subjects.

New Trade Literature

Bulletin No. 1775, recently issued by the Link-Belt Company of Chicago is an 84 page catalog describing the latest developments in anti-friction rollers and ballbearings manufactured by the company. The well illustrated catalog gives the construction uses of "Friction Fighter Bearings" and includes numerous tables on sizes, weights and load ratings as well as other information of immediate interest to the paper mill executive.

The Stephens-Adamson Company of Aurora, Illinois, has recently distributed a 32 page catalog, No. 840, which adequately describes the new "Sealmaster" ball bearing units manufactured by the downstate Illinois concern. The catalog is well illustrated and contains descriptions of various uses, mounting instructions, load ratings and other useful information.

Now Taylor Machinery Corp.

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 20, 1941—Announcement is made here of a change in name of the Lansing Machinery Corporation to the Taylor Machinery Corporation following the filing of a certificate under state laws. A change in the personnel of the concern is made with the retirement of the original president, Edward S. Lansing, and the selection of Roswell F. Taylor as his successor. The other officers are John B. Harris, vice president, Alfred Baylies, treasurer, and Mrs. Helen Mason, secretary. The company has patents and is testing out a machine at the present time which it is said will completely revolutionize the processing of pulp and paper stock if experiments result satisfactorily. The machine would, it is claimed, give a higher degree of hydration as well as a speedier and cheaper production cost for all kinds of paper. One of the machines, invention of J. H. O'Connell, well known mill superintendent and executive of many years' experience, has been installed at the Hudson Falls mill of the Union Bag and Paper Company under experimental test for the past two months. It is being observed by officials of the concern at the present time. Thus far these experiments have displayed a marked improvement in the quality of paper made but are yet incomplete and will be continued for some time. The Taylor Machinery Corporation is operating steadily.

To Dismantle Atlas Paper Mfg. Co.

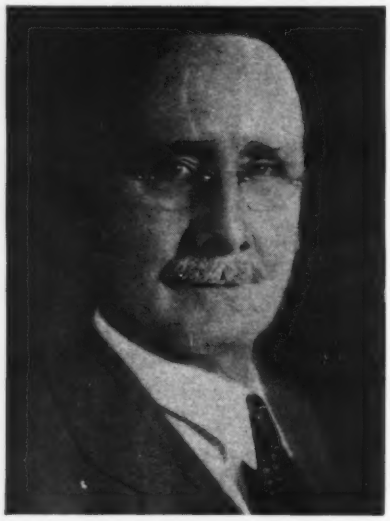
The J. J. Ross Company, liquidators, dismantlers and appraisers of pulp and paper machinery of every description, 250 Frelinghuysen avenue, Newark, N. J., announce that they have recently purchased the entire equipment of the plant of the Atlas Paper Manufacturing Company at York, Pa., and will dismantle it. Readers are requested to send for catalogue number 47.

Obituary

George A. Macklem

George A. Macklem, a vice-president of the Beloit Iron Works, and for over forty years a ranking figure in the paper and paper machinery industries of the United States, died suddenly January 9 in his room in a Miami, Florida, hotel where he and Mrs. Macklem had gone before Christmas for the holidays. A heart attack was the cause of death. He was 75 years old. The funeral services were held in Beloit at the First Congregational Church. Interment was at Eastlawn Cemetery.

He is survived by his wife, four daughters and two sons. The daughters are Mrs. Erling Alvung,



GEORGE A. MACKLEM

Miss Elizabeth Macklem, Mrs. Fred Rainey and Mrs. Thomas Airth. The sons are William Macklem and C. E. Macklem. There are several grandchildren.

Mr. Macklem was born in Wilmington, Delaware, and as a young man learned the paper making machinery business with the Pusey & Jones Corporation. He learned his trade in the shops and became an erecting engineer and finally a sales engineer. While with his company he installed paper making machinery in England, Germany, Mexico and other foreign countries as well as the United States.

In 1907 he came to the Beloit Iron Works to serve in the capacity of a sales engineer. It was an association that lasted thirty-four years. In 1927 he became Vice President of the Company in charge of sales. His technical qualifications and abilities made him one of the ranking figures of the industry. He was a member of the American Society of Mechanical Engineers, and his counsel and advice were sought after in problems in the field of paper making.

During his residence in Beloit, Mr. Macklem was an active member of the First Congregational Church. He had served the church at various times as a member of the Board of Trustees and a deacon and he was one of the most active members of the Men's Club of the Congregation. Other organizations in which he took an active interest were the Masonic lodge, and the Beloit Historical Association which he served several years as vice-president. He was a very generous supporter and advisor of the Salvation Army and his name was always closely linked with all charitable and civic enterprises in the community.

Mr. Macklem's loss will be felt keenly by his many friends and business associates. His courage, honesty and high ideals will long be remembered.

Patrick F. Gaffney

Patrick F. Gaffney, in his early sixties, secretary and general manager of the Densen-Banner Co., Inc., New York and Ridgefield Park, N. J., died suddenly January 14 at his home in Dumont, N. J. He was apparently in robust health, attending to business throughout the day.

Mr. Gaffney had been with Densen-Banner company for sixteen years and for 26 years prior was associated with Robert Gair Company, Inc. When a boy he went with the Gair company as an electrotyper's helper, advancing to superintendent of operations over the entire plant then located in Brooklyn, and employing upwards of 2,500 operatives.

Mr. Gaffney joined the Densen Carton Company in 1925 in an executive capacity and became an official of the merged businesses of Densen and Banner folding box companies in September 1932.

Keenly interested in making his industry a better one, he sponsored educational and organization work and was one of the founders of The Folding Paper Box Manufacturers Association, Inc., New York, of which group he was president for eight years. He was also one of the original members of the Folding Paper Box Association of America and for the fiscal year ending March 1940 was chairman of the executive committee of that organization, presiding over its business sessions and conventions. He had also served as president of the Gair Old Timers organization.

Surviving, are his widow, two daughters and two sons.

John B. Van Horn

John Barwis Van Horn, 53, president and manager of the Holyoke Card and Paper company in this city, died at his home in Suffield, Conn.

Prominent in the paper industry, he had held numerous positions in large trade organizations and was active in the organization work of several hospitals.

He was a director of the Crocker-McElwain Paper Company and the Chemical Paper Company, both of Holyoke; past president of the Glazed and Fancy Paper Association and of the Card Board Manufacturers' Association, both divisions of the American Pulp and Paper Association.

Active as the supporter of many civic enterprises, he was a corporator of Springfield Hospital; trustee of Wesson Maternity Hospital; corporator of the Home for Aged Women, trustee and member of the board of finance at Wilbraham Academy and a member of the Suffield Post, American Legion.

Born in Philadelphia, Pa., Mr. Van Horn was the son of Alfred and Almira (Haas) Van Horn and came to Springfield at the age of 12 where he lived until 1938 when he moved to Suffield. He was graduated from Wesleyan university in 1908.

In 1909 he became associated with the Holyoke Card and Paper Company, being made treasurer and in 1933 he was elected president of the organization.

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He was a member of the Second Baptist Church at Suffield.

He leaves his widow, Olive Ames (Bliss) Van Horn; a son, Cortlandt Van Horn and a step-son, John Colfax Campbell and one brother, George A. Van Horn of Pasadena, Cal.

John P. Markert

John P. Markert of Stamford, Conn., who was associated in a sales capacity with the Continental Folding Paper Box Co., of Ridgefield, N. J., for the past 27 years died at the Stamford Hospital after a short illness on Jan. 9, at the age of 80. He was active in business until the time of his death.

Mr. Markert was born in Narrowsburg, N. Y., June 1, 1860. He had been connected with the paper box industry for 57 years, having been with the Robert Gair Co. for 30 years previous to his connection with the Continental Folding Paper Box Company. He was honorary president of the Gair Old Timers Association.

Funeral services were held in the First Presbyterian Church at Stamford on January 12, which were attended by a large number of friends and business associates. He was buried in Mt. Kensico Cemetery, Mt. Kensico, N. Y.

Surviving, are his widow, Mrs. Emma Weaver Markert. His only daughter died in 1904.

Mr. Markert leaves a large number of friends who admired his many fine qualities and will miss him.

Albert M. VanWagenen

Albert M. VanWagenen, treasurer and general manager of the Atlantic Carton Corporation, Norwich, Conn., died January 3, following a short illness of three weeks.

Mr. VanWagenen was born in Plutarch, N. Y., on May 8, 1876, and was united in marriage with Blanche L. Miller in Watertown, N. Y., in 1900.

Mr. VanWagenen was formerly connected with the Robert Gair Co. as manager of the folding box department covering a period of years and in 1916 left their employ to found the Atlantic Carton Corporation with Walter E. Turner.

He formerly lived in Brooklyn, N. Y., and came to Norwich, Conn., in January 1917 where he became one of the city's most prominent citizens. For the past several years he had been chairman of the board of education of the City of Norwich and was a member of the board of directors of the Dime Savings Bank. Religiously, he was affiliated with Park Congregational church and at one time was a member of the Board of Trustees. He was also a member of the Norwich Rotary Club.

Surviving Mr. VanWagenen, besides his widow, are one son, Albert M. VanWagenen, Jr., of this city; a brother, William M. VanWagenen of Yonkers, N. Y., a sister, Mrs. Elizabeth Perrine of Claremont, Cal., a grandson, Albert M. VanWagenen, 3rd; three nephews and one niece.

Public Schools of Norwich as well as the Atlantic Carton Corporation were closed and the City flags placed at half mast on January 6, the day of the funeral.

The services were held at Park Congregational Church and conducted by Rev. Theodore H. Shipherd, D.D., who also had charge of the commital service at the family plot in Maplewood cemetery.

David Milne

David Milne, machine shop superintendent of the Farrel-Birmingham Company, Ansonia, Conn., for the past 21 years, died at his home in Milford, Conn., December 25, 1940.

He had not been in good health for some time, but had been able to attend to his duties up to the day before he died.

Mr. Milne was born in Montrose, Scotland, September 30, 1878, served his machinist apprenticeship at the Chapel Works in Montrose and in 1900 went to Canada where he worked as a machinist in a railroad locomotive plant. He came to the United States and in 1907 started work at the Farrel Foundry and Machine Company. In 1916 he was made a foreman and in 1920 became superintendent of the machine shop.

He was especially well informed in the use of machine and cutting tools and his wide experience and knowledge enabled him to assist many machine tool builders in improving their designs.

Mr. Milne was a member of the Congregational Church in Milford; George Washington Lodge, F. and A. M., Ansonia; Milford chapter, Royal Arch Masons; Orange Council, R. and S. M.; Lucia chapter, O. E. S., Milford; Milford court, Order of Amaranth; the Foremen's Club of the Lower Naugatuck Valley and the Veterans' Association of the Farrel-Birmingham Company.

He is survived by his wife, Mrs. Elizabeth Neary Milne; two daughters and a son, of Milford; a sister and two brothers in Scotland and four grandchildren.

To Use Home-Produced Raw Materials

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 22, 1941—Question of the adequate employment in the British paper industry of home-produced raw material is occupying the attention of papermakers, according to a recent report from the American Consulate, Manchester. This has been given particular emphasis in view of the closing of certain sources of imports. At present official restrictions prevent papermakers from making use of the large quantities of waste paper and other materials now available. In some quarters it has been urged that the Paper Control should permit a free market in papers made entirely from home-produced raw material, since this policy would not affect supplies of paper for Government or war purposes and would result in a production equal to 100 per cent of the pre-war output without any increase in imports of raw material.

Paper manufacturers interested in the export trade intend to make special efforts to increase exports of coated and tinted papers, tissues and fancy papers, many of which types were supplied by Germany and Italy before the war to markets which cannot now obtain the goods because of the British blockade. Paper goods such as boxes, toys, handkerchiefs, dishes et cetera, were also exported by the above-mentioned countries, and it is hoped to produce paper suitable for these products at competitive prices and thus secure the markets.

There is believed to be ample scope in this direction if concerted efforts are made.

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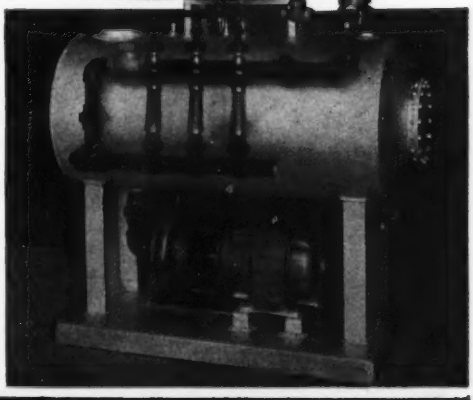

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Recent Engineering Developments Cut Operating Costs

W. R. Harris [1]

During the past year, increased production, higher taxes, and the rising costs of labor and material have emphasized operating efficiency and economy in the pulp and paper industry. Many significant engineering developments, applied both in new and modernized installations, have helped increase operating economy by lowering production costs and improving efficiency. For example, record-breaking speeds have been reached on a paper machine with sectional drive; quality and production are improved by ultra-precision control of speed; maintenance is reduced by "electrical lineshafts"; waste is less because of accurate threading drives; and operating economies are improved by modern systems of heat balance. In general, the industry is rapidly absorbing all new engineering ideas that pay their way, such as ready-to-use switchgear, instrumentation of processes and simplified protection of circuits.

Sectional Drive Powers Fastest Machine

The Crossett Paper Company is a typical and noteworthy example of the possibilities of modern sectional electric drive. Their 210-inch kraft machine was originally designed for a maximum operating speed of 1250 fpm. After approximately two years' operation, the operating personnel had pushed production to the top and were operating the machine at its maximum designed speed. The performance of the drive indicated that it could be successfully operated at speeds in excess of the designed maximum. There was adequate capacity in the generating and motor equipment to permit of higher speed.

After making slight modifications to the control and speed regulating equipment the maximum operating speed was increased to 1540 fpm, and now the machine is regularly in commercial production at this top speed producing a 40 lb. kraft sheet. From available data this appears to be a world's record for operating speed with paper of this grade. This record is a tribute to the operating efficiency of both the mill personnel and modern sectional electric drive.

[1] Industrial Engineer Westinghouse Electric and Manufacturing Co.

Electric Sectional Drives Cut Cost

Many other paper machines have increased productive capacity and improved operating economies by installing sectional electric drive. The electric drive with starting generator system of control, sensitive electronic voltage regulators, and extremely accurate section speed matching devices, assures greater productive efficiency. These benefits come from increased flexibility, more accurate control of machine speed and draw, and reduced operating cost resulting from lower maintenance and power consumption. This modern drive has been profitably applied to machines of practically every type and speed range.

Latest Drive Has These

A new drive now being built for an important mill includes:

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Sensitive and accurate control of draw, by using quick response field forcing carbon pile section speed regulators.

Slack take-up between adjacent sections, such as the dryers or calenders, without changing the permanent draw adjustment.

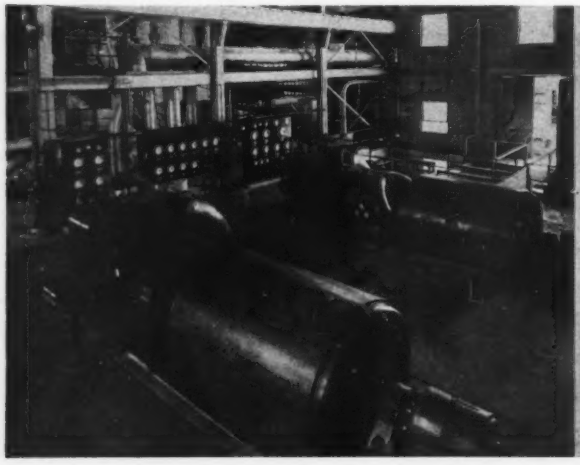

FIG. 1

FIG. 2

FIG. 1—In This Southern Paper Mill, a Combination of Condensing and Non-Condensing Turbines Most Economically Meets the Varying Requirements for Power and Process Steam. Each is 7500 kva. Operating at 550 lb. Initial Pressure, 700 deg. f.t. One Extracts at 35 lb. and Exhausts to Condenser at 28 in. Vacuum; the Other Extracts at 135 lb. and Exhausts at 35 lb. Pressure. FIG. 2—The Utmost Simplicity of the Power Layout Characterizes Sectional Drive as Applied to This and other Paper Machines.

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Waxed Paper Manufacturers
Pad Manufacturers

BIBLIOGRAPHY OF PULP AND PAPERMAKING

Contents

Gives you complete references to articles appearing in all publications dealing with paper making. To locate information on any subject in the industry these books are a necessity in every library.

250 YEARS OF PAPERMAKING IN AMERICA

Contents

Beginning with Rittenhouse Mill in 1690 this book details the progress of the industry since its very start in America. Contains histories of leading mills, fully illustrated with photographs of "old timers" in the industry—men who pioneered in various processes, and present mill executives. It traces records of families, mill mergers, etc. Contrasts present day mill equipment by listing everything used in a paper mill today with equipment used 250 years ago. This is the only single publication in which all this information can be found. Handsomely bound in blue cloth, stamped in gold leaf, and an asset to any library, whether in the mill or in your home.

PAPER MAKING MATERIALS

Contents

Complete technical names of all woods used in processes. References on other cellulose materials used in paper making. Cross references to further details on these materials as given over long period of years in various publications.

Uniform paper speed regardless of changes in mill frequency and load by employing electronic voltage regulators of unprecedented accuracy.

No power belts and clutches are used.

Accurate slow speeds which can be maintained indefinitely for inching of the various sections.

Sag-back compensation to eliminate disturbance on the last dryer section in case of a paper break at the dry end of the machine.

Reversing of calender stacks provided.

Utmost in drive flexibility by the starting generator system of control.

Auxiliaries Turn to Sectional Drive

During the past year the trend has been definitely toward individual sectional drive for auxiliary processing machines used in the pulp and paper industry. These drives utilize the variable voltage d-c type of drive with a suitable source of d-c power supply, individual motors geared for driving each section of the machine, and complete control, tailored to meet individual operating requirements. The operating speed range required is obtained by voltage adjustment of the d-c generator supplying power to the section motors. The motors are unregulated and are designed with the proper characteristics to inherently maintain substantially constant draw between sections over the entire operating speed range.

Recently, such drives have been applied to coating machines, combining machines, special board calendering machines consisting of several two-roll calenders operated in tandem, special saturating machines, special board forming machines, special drying machines, etc. These drives require a minimum of floor space and eliminate all lineshafting, countershafting, open gearing, clutches and slip belts, thus increasing efficiency and flexibility, materially reducing maintenance expense and lessening personal hazards.

It is interesting that an individual sectional electric drive of this general type has recently been applied to the world's largest wall board forming and pressing unit.

Wet End Drives Increasing in Use

The use of individual motor drives for the wet end sections of cylinder type machines is increasingly popular. This modern drive which may be applied to either sectional electric or lineshaft driven machines consists of a suitable source of d-c power supply, individual gearmotors driving individual wet end rolls, and complete control. Ordinarily, totally enclosed, forced ventilated motors and generators providing adequate protection against water are used with a separate motor-driven blower providing ample ventilation even at reduced speeds.

The inherent characteristics of the motors permit maintaining the correct driving effect while undergoing slight variation in speeds as a result of unavoidable changes in felt length. After proper initial adjustment the wet end drive needs no further attention on the part of the operator as it automatically follows the speed set up by the paper machine. The increasing use of this ingenious drive is now saving thousands of dollars and improving sheet qualities each year for many paper mills throughout the country.

These savings are made possible because individual section motor drive relieves the felt of heavy friction loads, reduces on felt cost per ton of board, reduces on time involved in shutdown for felt replacement, speeds production, and permits use of the proper felt to do its job of water removal and sheet formation by relieving it of duty as a belt.

Helper Drive

The principle of wet end drive has been adapted for use as a helper drive on the dual press, recently developed by one of the large machinery builders. The helper drive provides more efficient and economical operation by a more even distribution of power through the various nips resulting in longer felt and roll covering life, better formation, and a simplification of the drive layout.

Adjustable D-C Drive Speeds Production

The single adjustable speed d-c motor type of paper machine lineshaft drive continues to be popular. It is particularly suitable where the existing machine drive is inadequate, limiting production or interfering with sheet quality, provided the lineshafting and mechanical parts are suitable for further service.

Speeds are Better Controlled

With lineshaft-driven machines a uniform speed over the operating speed range is of utmost importance. Two particularly noteworthy automatic speed regulating systems for maintaining uniform speed have been developed and successfully applied. Both include a pilot exciter driven from the variable speed lineshaft, which detect the slightest variation in lineshaft speed. This slight variation in the pilot exciter speed produces an electrical impulse which is amplified and applies corrective forces to main d-c generator, restoring the paper machine speed with a minimum of disturbance.

The two systems of speed regulator are the same except for the amplifying device. One uses an electronic amplifier, and the other a recently improved regulating generator principle of speed control. The electronic device provides the highest available sensitivity. The regulating generator, based on well known principles of d-c rotating machines instead of vacuum tubes and electronic circuits, is simple and provides ample sensitivity for successful operation.

Where machines are required to operate from a constant voltage d-c bus instead of an individual generator, it is necessary to provide a different method of controlling speed. During the past year, a newly developed direct acting rheostatic regulator automatically compensates the d-c motor excitation for changes in operating conditions (such as a change in load or applied voltage) thus maintaining constant operating speed. The primary element is a pilot exciter driven by the line shaft.

Modernize Single Motor Drives

During the past year considerable interest has been shown in modernizing exciting single motor paper machine drives. Many mills have applied the electronic or regulating generator system for bettering the speed regulation of existing drives, thus assuring the most efficient overall performance of the paper machine and a more uniform product. These speed regulating improvements have been applied to both non-regulated drives and to drives having the older forms of regulator. In many cases the maximum speeds were increased and the operating ranges broadened. The large number of repeat installations

forcibly indicates that definite advantages are obtained by the use of a sensitive and accurate modern speed regulating system.

Speed Up Supercalenders

On supercalenders the trend is toward higher productive speeds, and drives furnished during the past year have been designed for as high as 1500 to 2000 rpm. For safety and economy these stacks are operated at a low speed of approximately 50 fpm. for threading. This requires an extremely wide range between threading and maximum operating speeds, and d-c variable drives, except for their inherent drooping speed-load characteristics, are particularly suited for this application. To partially compensate for this condition, driving motors obtaining part of the speed range by field control have been applied. This results in somewhat improved threading speed, but does not entirely eliminate the difficulty.

At threading speed, a regulating generator compensates for these drooping characteristics and serves to automatically maintain a safe, uniform threading speed regardless of load or frequency changes, and to increase reliability and economy of operation.

In modernization work, the regulator may be applied to existing d-c driven machines with only slight modifications of the control, due to the extreme simplicity of the circuit arrangement.

Uses 30:1 Range on 150 HP Supercalender Drive

Recently a 150 hp drive, for a maximum productive speed of 1200 fpm was installed in a large eastern mill, and employed a newly-developed regulator giving a threading speed of 40 fpm, a range of 30 to 1 in speed. The flexibility and simplicity of the ingenious drive and its precise control of threading speed resulted in a high operating efficiency of the stack. The results at the mill were so beneficial that a second unit is being installed.

Solve Speed Problems with Precision Regulator

The drive is a clever modification of the proven speed regulating system extensively applied to high speed elevator and variable voltage planer control, and is applicable to virtually any d-c drive in the paper industry requiring precise speed regulation. For example, on variable voltage supercalender drives as a threading speed regulator, on core type reel drives as a sheet tension regulator, and to single motor paper machine drives as a speed regulator, and similar jobs requiring accurate speed regulation.

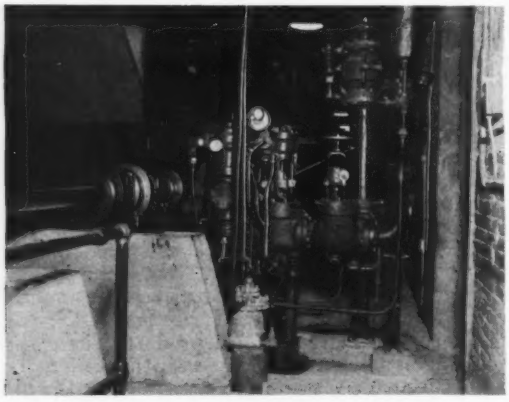


FIG. 3

350 hp. Turbine with Double-Ended Gear Driving 400 rpm. Lineshaft at the West Viriginia Pulp and Paper Company, Mechanicsville, N. Y., Provides 16:1 Speed Adjustment.

The regulator is ingeniously simple and rugged. It consists of a small d-c generator with special iron in the magnetic circuit and special field windings. The armature is driven at constant speed and is the only moving part of the device. The regulator functions entirely through the interaction of its special fields and provides the necessary amplification for the required sensitivity of the various applications. The simplicity of this system, which involves only the well-known principles of rotating d-c machines, and the absence of all parts requiring delicate mechanical adjustment to compensate for wear in the regulating element, assures maximum accuracy with a minimum of maintenance and attention. The inherent stability of the regulator lets it operate over extremely wide range of speed with uncanny precision.

Low Cost Revamping

For the moderate speed supercalender, the alternating-current two-motor drive has proven particularly suitable, especially where the added cost of d-c conversion equipment cannot be justified. This drive provides a main motor for driving the calendar at productive speeds and an auxiliary motor which serves to drive the calender at threading speed through an overrunning clutch.

The control has recently been simplified and improved to provide more flexible and convenient operation. The drive is usually brought to a quick stop by reversing the motor power supply which requires removing power when zero speed is reached. A recent development is an electrical "plugging relay" that automatically performs this function. The device functions only in the control circuits and is not mechanically connected to the motor shaft as so-called "zero speed switches".

Less Tearing of Sheet

The control has been further improved so that on acceleration the "threading" motor is not deenergized until the "main" motor has picked up the load, and on deceleration the "main" motor is not deenergized until the "threading" motor has taken the load. Thus, a very smooth transition period is provided with a minimum tendency to jerk or tear the sheet, and maximum operating efficiency with a minimum of paper spoilage results.

Wires Replace Lineshafts

Although the principle of synchro-tie system has been known for many years it has only recently been applied to any great extent. The term "synchro-tie" has been adopted to denote a combination of wound rotor motors connected in such a manner that any rotation of the armature of one of the motors causes an equal rotation of the armature of the other motor. There is a close analogy between an electrical "synchro-tie" system and a lineshaft or mechanical transmission connecting two machines. Both systems will transmit torque or power and after steady running conditions have been established, the delivery and receiving ends of both will make exactly the same number of revolutions.

In the mechanical transmission the shaft will twist under application of torque so that an angular difference between the ends of the shaft will result. In the synchro-tie also, application of torque causes an angular difference between the transmitting and

receiving motors. In the case of the shaft transmission the amount of angular twist depends upon the torque transmitted and the length and diameter of the shaft. In a synchro-tie drive the angular difference between the two units is a function of the size of the motors and the torque transmitted.

In general where power is transmitted by any combination of shafts, gears or other mechanical units, the same result can be accomplished by a properly-designed synchro-tie drive. The more complicated the mechanical drive the more pronounced will be the advantages of the electrical system. This modern system of power transmission has recently been applied to many drives in the pulp and paper industry including draw adjustment from the front side of the machine, remote operation of valve mechanisms, the remote indication of position of floats and similar devices, the synchronizing of conveyor systems, etc.

Tie Rolls Together Electrically

Certain of the pulp and paper making processes require the use of presses or squeeze rolls where the upper and lower rolls must run together at exactly synchronous speed and the material cannot be depended upon to transmit any driving effort. To meet these requirements the ordinary mechanical drive is not satisfactory, nor are d-c motors driving each roll. On a recent drive, after careful consideration, engineers applied a synchro-tie to both the bottom and the top rolls. These units are operated in conjunction with a variable voltage d-c drive utilizing d-c motors properly geared for driving each remaining individual section of the machine. Operating results are most satisfactory.

Combination Drives Pay

Pulp and paper mills require relatively large quantities of steam for heat and power and the reduction of fuel cost, or the cost of steam and power per ton of paper, is of vital importance. An increasing trend is toward replacement of steam-driven machine lineshafts by electric drives, gaining higher overall plant economies. These savings come from the lower thermal, mechanical and electrical, conversion losses of a large main power house steam unit operating at constant speed in combination with an adjustable speed electric drive, as compared with the higher losses of the smaller individual adjustable speed steam units.

"Bleeders" are Flexible

The bleeder turbine unit, which extracts mechanical energy from the steam as it expands from the initial pressure to the lower pressures and temperatures for process purposes, has been highly developed. Diversified arrangements of bleeder turbines are installed, including a combination of single bleeder units.

For example, one or more units can take steam at boiler pressure, bleed at 150# pressure, and exhaust at 50# pressure, yet operate in parallel with one or more units taking steam at boiler pressure, bleeding at 50# and operating condensing. Double bleeders have also been applied, taking steam at boiler pressure, bleeding at both 150# and 50# and operating condensing. Uniform mill frequency and bleeder pressure are now maintained regardless of variations in load and process steam demand, by improved turbine control. Uniform operating conditions throughout the mill improve quality of product and increase mill production.

Larger Units Appear

There appears to be a tendency in the pulp and paper industry toward larger single generating units. It is interesting to note that many of the new modern mills have little or no standby generator capacity when operated at full production schedule. This tendency is reflected in the older mills when expansion or replacement makes it necessary to install additional generating capacity. This is possible only because of the extreme reliability of the modern power systems. Present turbo-generating units are designed with ample factors of safety which permits of long schedules of continuous operation with only periodic inspection during short shutdown periods in the production schedule.

Improve Turbine Driven Paper Machines

The product and overall performance of adjustable speed turbine driven paper machines has been improved by a newly-developed governor providing close regulation over the required operating speed range. This direct-acting mechanical-oil relay type of governor is applicable in a wide variety of turbine drives including single or multi-stage and single or multi-valve, as industrial power and heat balances require. Adjustable speed turbine drives, incorporating the many features of this improved governor, maintain close regulation in spite of varying steam conditions and insure the flexibility of speed control demanded of a modern paper machine drive—a factor very essential in the production of different grades of paper. Many of these turbine drives are now operating successfully in a variety of mills, producing uniformly high quality paper at low cost and with a minimum of maintenance.

Apply Ready-to-Use-Switchgear

Each year the pulp and paper industry installs more and more metal-enclosed cubicle and metal-clad switchgear. Completely factory built and delivered to the mill location fully assembled, it requires only generator and feeder service and external control wiring connections. This assures proper alignment of component parts, adequate insulation and clearances, and a fully-housed structure which may be readily inspected and serviced. To meet individual mill requirements both stationary and removable circuit breakers are used. Complete safety for the operators is afforded with all live parts enclosed and interlocked.

Air circuit breakers are finding increased use in the industry. These "de-ion" breakers have a useful time delay on moderate overloads, with instantaneous trip under short circuit conditions. Compact, with high interrupting capacities, they make exceptionally economical feeder switchboards. With expansion of air breaker developments utilizing the "de-ion" principle for faster breaking action, speedier air extinction, and higher interrupting capacities, these breakers are used for virtually all indoor applications in the industry.

Simple Fuse Solves Old Problem

The boric acid high voltage fuse, which was developed comparatively recently, has been recently applied in a number of mills in connection with 2300 volt distribution. The rupturing capacity of

the fuse on 2300 volt systems is over 100,000 kva, and it serves to clear shorts of various magnitudes in the following time periods:

3000 amperes—3 cycles
5000 amperes—2 cycles
10000 amperes—1 cycle

Construction of the fuse is such that it may be used as a disconnect switch. It is a safe and economical solution to many circuit protection problems where more costly protection cannot be justified. The fuse elements of the boric acid fuses are renewable, and renewable elements are readily replaceable in the permanent fuse structure.

Metering Improves Efficiency

Proper metering is one of the important steps toward improving the efficiency and lowering the operating costs of the processes of pulp and paper manufacture. A careful record of the load and voltage conditions throughout the mill permits economies through duplication of results in processes depending on the amount of energy used and by indicating abnormal load, voltage or power factor conditions aids in increasing the mill effectiveness.

The recently developed "plug-in" instruments provide a means of low cost metering of vital drives and circuits. These instruments can be plugged in to take readings without interrupting production and when not in use the instrument can be removed and the socket covered by a glass disc which locks in place. This development affords maximum economy in the purchase of metering equipment since several low cost sockets may be connected in important circuits and used with one or more meters.

Many Ways to Better Operating Economy

A careful consideration of these recent developments may suggest many ways of improving plant economies and quality of the product. There are many cases in which minor modifications of existing installations by newly developed devices permits more effective utilization of machines. Through the use of modern engineering many older mills continue to operate profitably, meeting the competition of newer mills. Companies like Westinghouse have been associated with the problems of the pulp and paper industry for over 50 years and its application and research engineers are continually working on new ideas for solving the new problems which are a part of the thriving and growing industry.

Newsprint Consumption Doubles

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 22, 1941—Consumption of newsprint in the United States more than doubled between the years 1914 and 1939 according to B. M. Frost of the Forest Products Division of the Department of Commerce.

Discussing this consumption further Miss Frost says: Most of this increase took place between the years 1914 and 1926, at the end of which time domestic consumption had reached 3,518,100 tons. Since 1926 consumption has varied from year to year but no clear cut trend has been apparent. The consumption of 3,555,900 tons in 1939 was but little higher than that of 1926 and exceeded only slightly the 3,412,500 ton annual average for the past 15 years.

Increased consumption in the United States has been met by increased imports rather than through increased domestic production the trend of newsprint production since 1914 has been steadily downward, the 1939 output being twenty-eight per cent lower than in 1914. There was a slight tendency toward increased domestic production between the years 1914 and 1926 but as our virgin forests of spruce were cut off and those of Canada were opened, the domestic production trend turned downward. Commencing with 1927 there has been an almost steady fall in production, the lowest point being reached in 1938 when the output amounted to only 832,300 tons.

Imports in the meantime, have risen from 17.5 per cent of consumption in 1914 to 33.9 per cent in 1918, 52.6 per cent in 1926, 72.0 per cent in 1935 and to 77.6 per cent in 1937. In the two succeeding years of 1938 and 1939 the percentage dropped slightly, but in 1939 imports were still running at 73.5 per cent of our consumption and were being supplied mainly by Canada.

Details of United States production, imports and exports of newsprint from 1914 to 1939, inclusive, and our apparent consumption during these years are shown in the following table:

APPARENT NEWSPRINT CONSUMPTION IN THE UNITED STATES

[Short tons of 2,000 Pounds]

Year	Capacity per year 310 days	Production	Imports [3]	Exports [1]	Available for domestic consumption	Percent Domestic	Percent Imported
1914	.....	1,313,300	269,000	44,500	1,537,800	82.5	17.5
1915	.....	1,239,100	324,600	62,800	1,500,900	78.4	21.6
1916	.....	1,315,000	438,700	63,600	1,690,100	74.1	25.9
1917	.....	1,359,000	491,600	72,500	1,778,100	72.4	27.6
1918	.....	1,260,300	596,500	96,700	1,760,100	66.1	33.9
1919	.....	1,323,900	627,900	110,300	1,841,500	65.9	34.1
1920	.....	1,512,000	729,800	45,900	2,195,900	66.8	33.2
1921	.....	1,237,400	792,500	16,800	2,013,100	60.6	39.4
1922	.....	1,447,700	1,029,300	26,800	2,450,200	58.0	42.0
1923	.....	1,521,100	1,208,800	16,400	2,713,500	55.5	44.5
1924	.....	1,481,400	1,302,200	17,200	2,766,400	52.9	47.1
1925	1,773,500	1,563,300	1,448,400	22,700	2,989,000	51.5	48.5
1926	(2)	1,686,700	1,850,700	19,300	3,518,100	47.4	52.6
1927	[3] 1,968,200	1,516,900	1,987,100	12,300	3,491,700	43.1	56.9
1928	1,891,300	1,415,500	2,157,100	11,400	3,561,200	39.4	60.6
1929	1,695,100	1,409,200	2,422,700	18,700	3,813,200	36.5	63.5
1930	1,712,100	1,226,100	2,279,600	10,200	3,495,500	34.8	65.2
1931	1,636,500	1,203,300	2,066,900	9,700	3,260,500	36.6	63.4
1932	1,649,800	1,047,000	1,792,100	8,500	2,830,600	36.7	63.3
1933	(2)	928,300	1,793,500	11,100	2,710,700	33.8	66.2
1934	1,237,800	989,700	2,209,700	23,400	3,176,000	30.4	69.6
1935	1,081,300	947,700	2,383,300	22,500	3,308,500	28.0	72.0
1936	1,007,800	938,300	2,751,600	14,600	3,675,300	25.1	74.9
1937	1,000,400	975,900	3,317,000	17,000	4,275,900	22.4	77.6
1938	960,400	832,300	2,274,600	5,600	3,101,300	26.7	73.3
1939	(2)	954,400	2,615,100	13,500	3,555,900	26.5	73.5

[1] Years 1914 to 1917, inclusive, fiscal years ending June 30; remainder calendar years.
[2] Not available.
[3] Because of change of method of reporting, figures for 1927 and previous years are not strictly comparable with succeeding years.
[4] "Apparent Consumption" is estimated by adding imports to domestic production, and deducting exports. It does not allow for newsprint imported or produced in one year, used in the next, or allow for stocks.

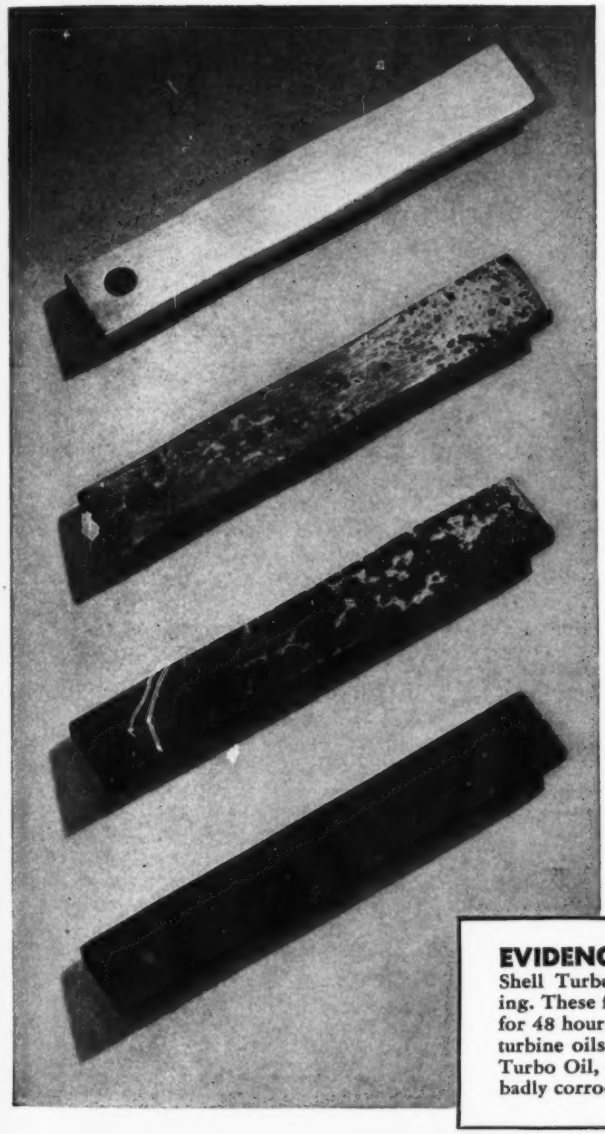
Sources Production figures: Bureau of the Census, years 1914, 1919; Federal Trade Commission, years 1915 to 1918, inclusive, 1920, 1922, 1924; Bureau of the Census, years 1921, 1923, 1925, 1927 to 1939, inclusive. Import and export figures, "Commerce and Navigation," published by Bureau of Foreign and Domestic Commerce. Imports represent "imports for consumption."

Finch, Pruyn & Co. Elect Officers

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., January 20, 1941—The annual meeting of Finch, Pruyn & Co. was held last week and resulted in the reelection of the president. Other officers and directors were reelected as follows: George N. Ostrander, vice president and secretary; F. B. Chapman, treasurer. The board of directors will be composed of the officers and Harold F. Bullard, Louis P. Brown, Samuel Pruyn, Mrs. Helen E. Foulds and Miss Nellie M. Howe, directors.

SHELL ANNOUNCES NEW TURBINE OIL!



FIRST and ONLY lubricant that meets the most stringent requirements of modern turbine lubrication

- **RUST PREVENTION**
- **OUTSTANDING OXIDATION STABILITY**
- **NO FOAMING**

No other oil on the market today can match the performance of this new product

EVIDENCE: — Test strips showing that Shell Turbo Oil positively prevents rusting. These four steel strips were immersed for 48 hours at 167° F. in four well-known turbine oils. Top strip, immersed in Shell Turbo Oil, shows no rust. All other strips badly corroded.

SHELL

SHELL *Turbo Oil*

WISCONSIN GROUP SHIPMENTS SET UP RECORD

(Continued from page 11)

sociation of Manufacturers has launched a program to expand research in industrial laboratories to a point where American industry will mobilize a quarter of a million scientists and engineers and a billion dollars a year for the development of new and better products.

"Industry is promoting research now not only to solve defense problems but to develop new products and processes which can be taken up by industry after the emergency is over and our expanded industrial capacity is released from armament production. By having new goods, new services and new industries, then we can have new jobs and new sources of wages and salaries. This will lighten the economic shock so that the problem of readjustment will not be as severe as it was after 1918."

"I don't believe," added Mr. Hansen, "that industrial management need fear the attitude of various government departments toward labor relations, and it is unthinkable that the American people will tolerate the blacklisting of companies which have been accused of violating the present confused labor laws. To bar these companies from receiving defense orders would deprive the country of some of our best industrial facilities and cut off sources of income from many deserving workers. Neither do I believe that industrial management has the idea that tremendous profits are going to be made out of this period. Industry in general does believe that labor and capital must be reasonable in order that our security from aggressors on the outside can be assured."

Fox River Co. Signs Contract

The Fox River Paper Corporation, Appleton, Wis., has signed a new contract with the Appleton local of the International Brotherhood of Papermakers, in effect until December 31, 1941. It is substantially the same as last year's contract, and provides a plan of vacation with pay for employees having five or more years of service. Emil Noren, international representative, negotiated the agreement with officials of the company.

Paper Making Film Shown

Motion pictures entitled "The Romance of Papermaking" were shown by S. F. Shattuck, vice-president of Kimberly-Clark Corporation, Neenah, Wis., at a meeting of the Rotary Club at Menasha, Wis. last week. The film shows the various phases of papermaking from timber to market. It emphasizes that comfortable, happy and healthful surroundings in the mill, in the community and in the home are necessary to the success of employer and employee alike.

Thilmany Employees Elect Officers

William Gillen has been elected president of the Thilmany Employees Association of the Thilmany Pulp and Paper Company, Kaukauna, Wis., for the year 1941. L. C. Smith, personnel director, is secretary, William A. Voie, assistant secretary, and C. R. Seaborne, chief engineer, treasurer. The association's retirement board reports a surplus of $36,506.12. There are 870 members in the organization.

Mill Credit Union Holds Meeting

The Fox River Mill Credit Union of the Fox River Paper Corporation, Appleton, Wis., held its annual meeting Sunday, January 12, at the Conway hotel at Appleton. Ignatius Mauthe was reelected president; Reuben Grube, vice-president; Arklaline Grimmer, treasurer; Charles Fuerst, secretary, and Claude Oellrich, John Olson and Everett Wegner, directors.

Babcock Estate Pays $295,000 Taxes

Inheritance taxes amounting to $295,000 were paid last week to the State of Wisconsin and Winnebago County on the estate of the late Charles A. Babcock, who was president of the Wisconsin River Pulp and Paper Company, Neenah, Wis. The estate is appraised at $3,783,647.

S. F. Shattuck on Advisory Committee

S. F. Shattuck, vice-president of the Kimberly-Clark Corporation, Neenah, Wis., has been appointed a member of an advisory committee to work with the United States office of education on the national defense program. His appointment was announced by George P. Hambrecht, Madison, Wis., state director of vocational education.

Indianapolis Demand Dull

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., January 20, 1941—Dull business continued to hamper the local paper market during the past week. Weather conditions, with temperatures far above normal, coupled with rain the entire week slowed up business of all kinds. Then too, the buying public has not recovered from Christmas and it is felt here that another week or so will have to elapse before trade resumes its normal trend.

The fine paper demand seemed to suffer along with other lines. Local printers say they have considerable work in prospect, but conditions are not right and some of it is being held in abeyance. Prices in all fine paper lines are firm, however.

Some demand continues to be seen for building paper and roofing and unless weather interferes too greatly, there will be a continued demand until spring opens. Dealers have fair stocks on hand, not large, but apparently well balanced and the entire trade is looking for another banner year in 1941. By the end of the month or the middle of February, jobbers are expecting some fair business in anticipation of spring.

Newsprint appears unchanged. Demand is fairly good, what with heavy advertising because of January sales, but it is hardly any better than it was a year ago. Prices are firm and are expected to remain at about the present levels during the first quarter at least.

A very slight increase was seen last week in the box demand. Local factories have not increased their production, but warehouse stocks are becoming lower. Due to demand from many defense industries in this section, a widening consumer base is seen and the outlook for the first quarter is rather bright. Prices showed no change.

Industry's "BIG BERTHAS"

Speeded-Up by Interpretive Engineering!

To a wide variety of overloaded plants, Grinnell Prefabrication offers an important short-cut in expansion of power and processing facilities. Through this expert service, super-piping systems . . . "big guns" in industry's attack on modern production problems . . . often can be installed with savings of weeks.

That's why leading engineers now prefer to "give the plans to Grinnell." Layouts of plant requirements will be speedily interpreted into super-piping systems by experienced Grinnell specialists . . . then prefabricated by advanced, time-saving methods in fully-equipped plants. And promptly, on delivery date, accurate sub-assemblies bearing underwriters' approval are on the job . . . ready to install with minimum field welding!

Write for comprehensive manual on Grinnell Prefabricated Piping. Grinnell Co., Inc., Executive Offices, Providence, R. I. Branch offices in principal cities.

PREFABRICATION BY **GRINNELL**

WHENEVER **PIPING** IS INVOLVED

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending January 22, 1941

	High	Low	Last
A. P. W.	2⅛	2⅛	2⅛
Armstrong Cork Co.	33	31	32
Celotex Corp.	9⅝	9	9½
Celotex Corp., pf.	72	70	70
Certain-Teed Products Corp.	4⅞	4⅜	4½
Certain-Teed Products Corp., pf.	35½	33⅝	34½
Champion Paper & Fibre Co.	19¼	19⅛	19⅛
Champion Paper & Fibre Co., pf.	105	103½	105
Congoleum-Nairn Co.	17	16½	16½
Container Corp. of America	15½	15⅛	15⅜
Continental-Diamond Fibre Co.	7⅜	6¾	7½
Crown-Zellerbach Co.	14⅞	14½	14¼
Crown-Zellerbach Co., pf.	92	91½	91⅝
Flintkote Co.	14⅞	14⅛	14⅛
Robert Gair	2⅛	2	2⅛
Robert Gair, pf.	16	15½	16
International Paper & Power	14⅜	13½	13⅞
International Paper & Power, pf.	65	63	63⅜
Johns-Manville Corp.	61¼	60	61¼
Johns-Manville Corp., pf.	127	126½	127
Kimberly Clark Corp.	37½	37	37½
MacAndrews & Forbes	31⅝	31¼	31¼
MacAndrews & Forbes, pf.	138	138	138
Masonite Corp.	28¼	28	28
Mead Corp.	8⅞	8½	8⅝
Mead Corp., pf.	75	75	75
Paraffine Companies, Inc.	37¼	36⅝	36⅝
Rayonier, Inc.	15½	15	15¼
Rayonier, Inc., pf.	28½	28¼	28
Ruberoid Co.	16½	16	16⅛
Scott Paper Co.	36¾	35	35
Scott Paper Co., pf.	113½	113½	113½
Sutherland Paper Co.	22½	22⅜	22½
Union Bag & Paper Corp.	12	11½	11⅝
United Paperboard Co.	3¼	3⅛	3⅛
U. S. Gypsum Co.	68¼	64¾	68¼

New York Curb Exchange

High, Low and Last for Week Ending January 22, 1941

	High	Low	Last
Brown Co., pf.	15½	15½	15½
Great Northern Paper	42	42	42
Hummel-Ross Fibre Corp.	5¾	5⅜	5¾
National Container Corp.	12½	12⅛	12⅛
St. Regis Paper Co.	2⅜	2⅛	2⅛
St. Regis Paper Co., pf.	80¾	79¾	79¾
Taggart Corp.	3⅛	3	3⅛

Paper Index Number Rises

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 22, 1941—Index number of the value of paper manufacturers' inventories for November was 111.1 compared with 110.3 in October and 95.7 in November 1939 taking December 31, 1938 at 100, according to the Industry Survey of the Department of Commerce.

November index number of the value of paper manufacturers' shipments for November was 132 compared with 133 in October and 132 for November 1939, taking January 1939 at 100.

The September and October gains in manufacturers' new business and shipments were well maintained in November. New orders continued in very heavy volume although the total receded slightly from the peak reached in October. Shipments recorded a small rise from the previous month with increased deliveries of durable goods more than offsetting a decline in nondurables. The substantial rise in inventories which occurred in October was extended through November at almost the same rate.

New business placed with durable goods manufacturers in November continued at the extraordinary October volume. Incoming business for nondurable goods, on the other hand, fell off about 6 per cent. As a result, total new business for all industries was about 3 per cent under the previous month. The heavy volume of new orders received by durable goods manufacturers resulted in another very substantial rise of 14 per cent in unfilled order backlogs during November.

Complete Mt. Holly Paper Co. Report

CARLISLE, Pa., January 15—Addison M. Bowan, referee in bankruptcy announces that the Special Master has completed his supplemental report in the matter of the ownership of the machinery in the place of business of the Mount Holly Paper Company, bankrupt, in which report the landlords are awarded certain machinery and equipment, and the trustee is awarded certain machinery and equipment.

The said report may be examined at the office of the Special Master, No. 14 West High Street, Carlisle, Pa., and exceptions may be filed thereto. At the end of ten days from the date of this notice, the report will be submitted to the Court.

Detroit Products to Reorganize

A petition to reorganize under provisions of the Chandler Act amending the National Bankruptcy Act has been filed by Detroit Paper Products Company, in Federal Court at Detroit, Mich. The company seeks permission to reorganize through a plan of refinancing which will allow it to meet pending indebtedness.

Celotex Votes Dividend

The Celotex Corporation voted a distribution of 25 cents a share on the common stock payable February 4 to stockholders of record January 27. This is the first disbursement since a 100 per cent stock payment was made on November 4, 1938.

Bathurst Earns $1,177,809

The Bathurst Power and Paper Company, Limited for the eleven months to November 30 (Canadian currency) reports a net income before taxes, of $1,177,809.

Gair of Canada Nets $193,038

The Gair Company Canada, Limited, for the ten months to October 31: reports a net income in Canadian funds, of $193,038; net sales amounted to $5,-169,528.

To Study Packaging Trends

A program that will consider all of the principal developments and the likely trends in the field of packaging, packing and shipping is being planned for the conference that will run concurrently with the eleventh annual packaging exposition at the Stevens Hotel in Chicago on April 1 to 4. Both the conference and the exposition will be sponsored by the American Management Association.

Investigate Teak for Pulp

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., January 22, 1941—An article in a recent issue of the Bulletin of the Imperial Institute, describes experiments made on young thinnings from teak plantations in Trinidad, with a view to ascertaining whether an outlet can be developed for these thinnings in the manufacture of pulp and paper. The experiments were carried out at the Imperial Institute in London on material sent there by the Conservator of Forests in Trinidad. The samples consisted of billets about two feet in length, cut from three-year-old and four-year-old trees, with thicknesses ranging from one-half inch to nearly six inches in diameter.

Owing to the poor fiber length of the samples, the article states, only the soda process was employed as being the only one suitable for commercial treatment.

The following quotation, at the end of the article, gives the findings and conclusions: "The present investigation has shown that: (a) Young teak wood is a short-fibered material which, from the point of view of papermaking, is similar to woods such as aspen (Populus tremuloides) which find little outlet in paper-making except in the form of bleached soda pulps.

"(b) Both the 3-year-old and the 4-year-old wood are similar in chemical composition, fiber length and paper-making properties. The wood contains a high percentage of cellulose.

"(c) Young teak wood is readily digested by the soda process but does not yield an easily bleachable pulp. Efforts to obtain a bleachable pulp by the employment of more drastic cooking conditions reduced the yield and the strength properties of the pulp without producing the desired effect.

"It is not considered that young teak thinnings would be a promising raw material for paper-making owing to the short length of the ultimate fibers and the difficulty in producing an easy-bleaching pulp."

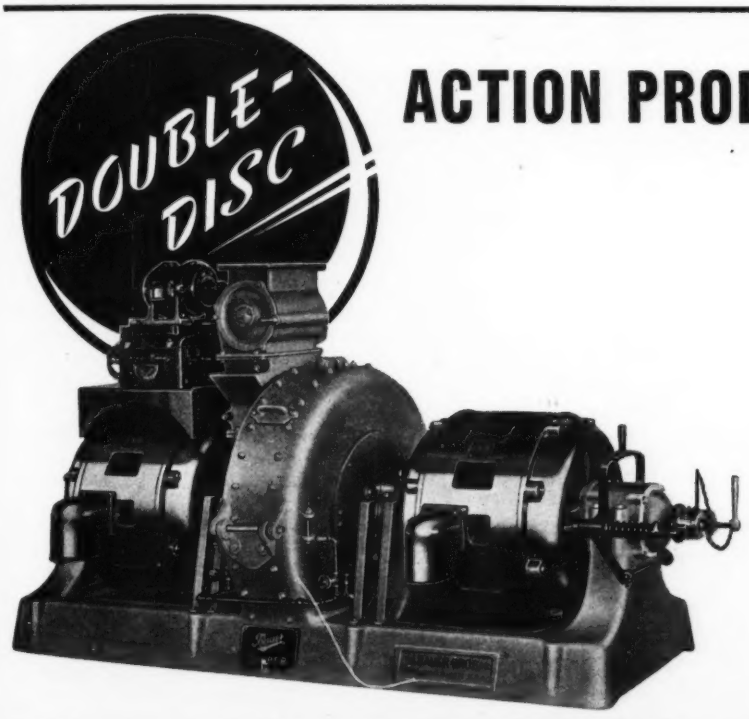
Social Security Numbers Important

ALBANY, N. Y., January 20, 1941—Many applicants for employment are experiencing considerable inconvenience and delay in securing work because they either lack or have mislaid or lost their Social Security Account number card, Milton O. Loysen, Executive Director of the Division of Placement and Unemployment Insurance, State Department of Labor, announced today.

"Persons who have never applied for Social Security numbers should contact the nearest field office of the Social Security Board" declared Mr. Loysen. "Duplicate numbers also can be obtained there by those who have lost their original cards.

"Possession of a Social Security number card is important to every job-seeker," continued Mr. Loysen, "because it provides a means of identification which can be used for industrial plants and may result in more prompt hiring when jobs are available.

"Every person seeking employment and every job-holder in private industry should secure and take pains to retain his Social Security card because of its importance both as a means of identification and because it is used by employers in reporting employee earnings for old age benefits and for unemployment insurance benefits."



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CONSTRUCTION NEWS

Columbus, Ohio—Frankenberg Brothers Paper Box Manufacturers, Inc., 479 South Ludlow street, manufacturer of paper boxes and containers, has awarded general contract to E. Elford & Son, 555 South Front street, for improvements and alterations in plant. Work will proceed at once. No estimate of cost announced.

Oakland, Calif.—The Gaylord Container Corporation, 2820 South 11th street, St. Louis, Mo., manufacturer of corrugated boxes and containers, has awarded general contract to W. Stocker, 7046 Waterman street, St. Louis, for erection of proposed new branch plant at Oakland, recently referred to in these columns. Company has secured a tract of about five acres of land for project, which will consist of a main one-story structure, with several adjoining buildings for storage, distribution and other operating service. Erection is scheduled to begin at once, with completion in about six months. Cost is reported close to $500,000, including equipment.

Chicago, Ill.—The American Decalcomania Company, 4326 Fifth avenue, manufacturer of processed paper transfers, etc., has awarded general contract to the All-Building Construction Company, 179 West Washington street, for new addition to plant, consisting of a one-story structure, about 75 x 125 feet, to be equipped for increased capacity. Erection will be placed under way at once. Cost reported over $60,000, with equipment. L. R. Solomon & Associates, 185 North Wabash avenue, are architects.

Linden, N. J.—Certain-Teed Products Corporation, 100 East 42nd street, New York, N. Y., manufacturer of insulating papers, roofing products, etc., has concluded arrangements for purchase of gypsum sheet products division of American Cyanamid & Chemical Corporation, New York, heretofore operated as a part of plant at Linden. The acquisition includes machinery and equipment for production of wall board, lath and allied specialties, exclusive of building, and will be transferred by the Certain-Teed company to one of its plants in near future, where installation will be carried out for operation of this new division. Increased capacity will be developed. It is expected to have the department ready for production in March.

Norfolk, Va.—Fire recently damaged a portion of building of the Atlantic Waste Paper Company, 1832 Church street. An official estimate of loss has not been announced. It is proposed to proceed with replacement of damage at early date.

Green Bay, Wis.—The Northern Paper Mills, Inc., manufacturer of tissue and other paper stocks, has superstructure in progress on new two-story addition, about 60 x 95 feet, recently referred to in these columns, to be used for extension in machine department. It is proposed to have structure ready for occupancy at early date. Cost is reported over $50,000, including equipment. The W. H. Pipkorn Company, Milwaukee, Wis., has the general erection contract.

Chicago, Ill.—The Celotex Corporation, 919 North Michigan avenue, manufacturer of insulating board, wall board and allied products, has all mills on practically a capacity schedule, and expects to continue at this level for a number of months to come. Large orders have been received to insure maximum output. Company branch mill on Middlesex avenue, Metuchen, N. J., is one of the main Eastern production units and is giving employment to a full working quota. Work is beginning on a one-story addition to mill at Marrero, near New Orleans, La., about 195 x 300 feet, recently noted in these columns, for expansion in storage and distribution department. Company also is expanding its storage and distribution facilities at the Newark Tidewater Terminal, Inc., Port Newark, Newark, N. J.

Camden, Ark.—The Williams Roofing Company, East Second street, Little Rock, Ark., manufacturer of prepared roofing, roofing papers, etc., has awarded general contract to B. W. Edwards, Camden, for erection of new mill in vicinity of South Camden, at a place known as White City, where site recently was secured. It will be about 120 x 400 feet, and is estimated to cost over $40,000, with equipment. Erection will be placed under way at once, and is scheduled for completion early in the spring. As previously noted in these columns, the new plant will replace a mill at Waterloo, Ark., destroyed by fire a number of months ago. J. M. Williams is company head.

Paperville, Pa.—The Beach & Arthur Paper Company, manufacturer of tissue, wrapping and other paper stocks, has work in progress on improvements in mill, including installation of additional equipment. Completion is scheduled soon. It is understood that a large part of program is for necessary replacements in present mill equipment.

Milwaukee, Wis.—The Milwaukee Lace Paper Company, 1306 Meinecke avenue, manufacturer of paper specialties, is awarding miscellaneous completion contracts for new one-story addition, about 40 x 115 feet, now in course of erection, previously referred to in these columns, to be used for storage, distribution and shipping service. Completion is scheduled at early date. An award for installation of sprinkler system has been made to the Grinnell Company, Providence, R. I. Structure is reported to cost close to $35,000, with equipment. Harry C. Breest, Milwaukee, is the general contractor for construction. Charles F. Smith, 717 North Sixty-fifth street, Wauwatosa, Wis., is architect.

New York, N. Y.—The Ryan Paper Corporation, 36 West 25th street, paper goods, has leased space in building at 318 West 46th street, and will occupy for expansion in storage and distribution, and increased office facilities.

New Companies, Etc.

Brooklyn, N. Y.—The Midtown Box and Paper Company, Inc., has been organized with capital of $10,000, to manufacture paper boxes and con-

tainers of various kinds. New company is represented by the Excelsior Stationery Company, 116 Nassau street, New York, N. Y., agent.

Brooklyn, N. Y.—The Leeds Bag and Paper Corporation has been chartered with capital of 100 shares of stock, no par value, to deal in paper bags, containers and other paper goods. New company is represented by Philip Galfand, 270 Broadway, New York, attorney.

Detroit, Mich.—The Detroit Paper Products Corporation, 5800 Dominie street, manufacturer of paper specialties, has filed a petition to reorganize under the provisions of the Chandler Act, amending the National Bankruptcy Act, and application is now being considered by the local Federal Court.

New York, N. Y.—Lindsay L. Baird Company, Inc., has been incorporated with capital of 25 shares of stock, no par value, to deal in pulp and paper products. New company is represented by Lindsay L. Baird, 60 East Forty-second street, company head, and will succeed to the organization of the same name at last noted address.

Newsprint Production Gains

Production of newsprint in Canada during December 1940 amounted to 252,897 tons and shipments to 276,457 tons according to the News Print Service Bureau. Production in the United States was 80,837 tons and shipments 84,037 tons, making a total United States and Canadian news print production of 333,734 tons and shipments of 360,494 tons. During December, 27,991 tons of news print were made in Newfoundland, so that the total North American production for the month amounted to 361,725 tons. Total production in December 1939 was 344,805 tons.

The total North American output of news print paper in 1940 was 4,784,825 tons, of which 3,418,803 tons was made in Canada, 1,013,437 tons in the United States, and 352,585 tons in Newfoundland. The Canadian output was 19.2 per cent more than in 1939, that in the United States 7.9 per cent more, with a gain of 14.5 per cent in Newfoundland, making a total continental increase of 668,076 tons, or 16.2 per cent.

Stocks of news print paper at the end of December were 152,371 tons at Canadian mills and 13,455 tons at United States mills, making a combined total of 165,826 tons compared with 192,586 tons on November 30, 1940, and 182,454 tons at the end of December 1939.

Prof. Knapp Heads Vancouver Section

Professor F. Malcom Knapp, forest products expert of the University of British Columbia, was elected chairman of Vancouver section, Canadian Society of Forest Engineers, when the society held a dinner meeting in Brock Memorial Building, U.B.C. Campus, recently.

Prof. Knapp will be assisted by M. F. Gormely, assistant district forester, as vice-chairman; R. M. Brown as secretary-treasurer, and representative on the general executive committee; and Charles MacFayden, R. V. Stuart and William Byers, councillors.

Recommendations governing Canada's forest policy are being submitted to the parent society at Ottawa.

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Garrett-Buchanan Hold Party

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., January 20, 1941—The Garrett-Buchanan Company's branches in Baltimore, Md., and Reading, Pa., joined the Philadelphia office in their annual Garrett-Buchanan party which was held January 17 at McAllisters, 1811 Spring Garden street. After partaking of a very enjoyable dinner served at 6:30 o'clock, and in which every one from the president to the office boy participated, president Morgan H. Thomas welcomed all those present and announced that all speeches would be eliminated thus confining the entire evening to social activities.

A large part of the entertainment program was made up of employees of the company, the highlights of which were a song to the tune of Bullard's Stein song composed by Harry Bratton, one of the utility men from the Philadelphia office, and two very fine selections rendered by Harry Fleming, a salesman of the Philadelphia office. The song composed by Mr. Bratton paid a glowing tribute to the excellent comraderie that exists between employer and employee in the Garrett-Buchanan Company.

Harold F. Kelley Dead

Harold F. Kelley, Treasurer and General Manager of the Kelley Paper Corporation, Bellows Falls, Vt., died early Tuesday morning, January 14th as the result of an operation for appendicitis which had been performed about a week previously.

PAPER TRADE JOURNAL

Title Reg. U. S. Pat. Off.

Henry J. Berger
EDITOR

Vol. 112 January 23, 1941 No. 4

COMING EVENTS IN PAPER INDUSTRY

American Paper and Pulp Association, Sixty-fourth Annual Convention and meeting, Waldorf-Astoria Hotel, New York, February 17-21.

Technical Association of the Pulp and Paper Industry, Convention, Roosevelt Hotel, New York, February 17-20.

Salesmen's Association of the Paper Industry, Annual Meeting and Luncheon, Waldorf-Astoria Hotel, New York, Tuesday, February 18.

National Paper Trade Association of the United States, Convention, Waldorf-Astoria Hotel, New York, February 17-20.

The New York Association of Dealers in Paper Mills' Supplies, Annual Banquet, Commodore Hotel, New York, Tuesday, February 18.

New England Section. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

Delaware Valley Section. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

Lake States Section. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

Kalamazoo Valley Section. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

American Pulp and Paper Mill Superintendents Association, Twenty-second Annual Convention, Poland Spring House, Poland Spring, Me., June 17-19.

OUTLOOK FAVORABLE

The business outlook for other than the more immediate future is complex and confused. As President Roosevelt sounded the keynote of the new national economy in his fireside chat and priority of production has been declared essential for the speedy fulfillment of the defense program, substantial changes in the normal pace of industry must be expected. Although the United States is at peace, the new legislation to make America an "arsenal for democracy" puts the country on a more urgent basis. To provide the aid considered requisite by the President, sacrifices must be made and it seems inevitable that restrictions must be imposed upon industry as well as higher costs upon all citizens.

From another aspect, the emergency confronting this country is likely to bring substantial achievements in the development of total resources, which cannot now be estimated in dollars. The United States is now beginning to expand in the greatest national effort attempted since 1917-1918. There is every reason to believe that the power of the United States will become vastly greater as resources of materials will be more fully utilized and the abilities of men will attain a more complete control of the production and distribution of practically all manufactured products.

With this prospect and facing the future with confidence, many of the anxieties of the present, such as the size of the national debt, deficits, and so on, appear less formidable. "As everything we value most in life may be at stake in 1941, we should concentrate on the vital issues immediately before us and not be distracted by those problems which seemed of major importance until dwarfed by the imminence of the threat to our existence as a free nation," A. D. Whiteside, president of Dun & Bradstreet, Inc., declares in the January 20 issue of *Dun's Review*. "In the light of the emergency," he continued, "the weight which has been given to the national debt may reasonably be re-assessed. There is no sound reason why, for the present at any rate, there should be forebodings regarding the effect of substantial borrowings for defense purposes. The amount of debt which can be borne by this country may be measured by the ability of the Government to pay the prevailing interest charges and moderate amortization on the funds borrowed. The debt recently suggested by the Secretary of the Treasury is not one which should imply the probability of currency, credit, security, or commodity inflation."

In commodity inflation, Mr. Whiteside expresses the conviction that if it appears at all, it will be of moderate degree, even though shortages of certain materials will occur. And of the Federal budget, "It is entirely within reason to suppose that the ordinary budget will be brought into balance in 1942. To balance one budget and to separate ordinary and defense expenditures would give added and sustained confidence." In the international situation, Mr. Whiteside continues, "there are four major possibilities. In the event of either of two of them, if England and her allies win, or if there is a negotiated peace, there will probably be a business reaction quite like that after the armistice in 1918, followed by intense activity for the same reasons as those which stimulated business from 1919 on until the depression."

In commenting further on this possibility, Mr. Whiteside went on to say that, "However, if England does win and a business reaction does follow, he looks for liquidation of the armament program on an unprecedentedly orderly basis. To the extent that inflation may have been avoided deflation will be far less of a problem that it has ever been under like circumstances in the past in this country. Secondly, defense financing bonds sold to business enterprises and to individuals will serve them as a reserve in future private emergencies. Finally, under the 1940 Revenue Act extended productive capacity resulting from the defense program will be paid for by the government through the five-year depreciation stipulation or acquired by it without substantial loss to its owners. The employment of labor during the transition period, Mr. Whiteside holds, will be the most difficult problem to solve, but may be materially eased if the ordinary budget is drastically cut during the

defense program by reducing public works expenditures to a minimum.

Should there occur either of two other eventualities, victory for the Axis or the entrance of the United States into the conflict, Mr. Whiteside predicts business "will be extremely active even though profits will be largely absorbed by taxes. Though an Axis victory might result in a high rate of business activity, the future would be too intricate to analyze with any degree of accuracy. To prevent that catastrophe," he would have the nation exert "every resource, its work man-power, its wealth, and its vital energies."

Concentration on reduction of the debts of the nation's local governmental units, is an essential part of the national defense program, Henry H. Heimann, executive manager of the National Association of Credit Men, declared in the January 18 issue of the association's monthly review of business. "Now is the time, if we ever intend to do so, to balance our normal governmental budget. And in the scope of the normal budget we must not omit inclusion of the regular, peace-time army and navy appropriations. To shift these regular items into the emergency defense budget serves only to becloud the effort at balancing the normal budget."

In commenting on government and taxes, Mr. Heimann said in part: "Let us not, however, in thinking of our national debt of nearly 50 billions overlook the total of nearly 20 billions owed by the 175,000 local units of government from states down to the smallest tax district. This must be reduced. Thus we will offset to some degree the rising national debt. Whether it is a federal, state or local tax claim matters not. The taxpayer's load is no lighter, be it on his shoulders in one large bundle or several that total no less." Analyzing the relationship of the defense program to domestic production, Mr. Heimann says that "the tremendously increasing consumer purchasing power that we are developing will of course mean greater demand for semi-durable and consumer goods, which will in turn tend to stimulate new consumer producing facilities."

Consider France's Pulp Requirements

WASHINGTON, D. C., January 22, 1941—Negotiations in Paris between representatives of the German and French pulp industries to decide how much pulp France needs to import this coming winter are said to have shown that with few exceptions the French paper mills have suffered relatively little damage, and that the stocks of pulp at the mills are insignificant, according to the Assistant Trade Commissioner at Stockholm. In order to cover immediate requirements, the French paper mills will need the fairly considerable quantities of Swedish, Norwegian and Finnish pulp, that had already been paid for and were loaded before communications were cut. In addition, immediate deliveries of German pulp are said to have been promised.

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES[1]

Months	1940	1939	1938	1937	1936	1935	1934
January	90.2%	77.5%	63.9%	90.3%	76.1%	65.8%	.....
February	86.2%	81.7%	68.7%	90.1%	77.9%	70.0%	.....
March	83.9%	84.0%	69.6%	90.3%	76.0%	70.5%	.....
April	86.3%	82.9%	68.3%	92.1%	82.3%	70.0%	.....
May	91.8%	80.2%	69.0%	90.6%	81.6%	69.4%	.....
June	93.8%	79.7%	66.0%	87.3%	80.7%	72.3%	.....
July	87.1%	75.2%	72.0%	81.8%	77.3%	64.9%	.....
August	87.2%	82.9%	77.2%	82.9%	81.5%	70.9%	.....
September	83.2%	88.7%	76.3%	78.6%	80.5%	71.9%	58.2%
October	88.0%	96.6%	82.5%	73.5%	87.6%	75.6%	64.7%
November	86.9%	97.2%	79.6%	61.9%	88.0%	75.3%	61.7%
December	83.3%	91.1%	74.4%	54.5%	85.9%	71.2%	59.6%
Year Average	87.5%	84.9%	72.3%	80.6%	81.3%	70.5%	.....

COMPARATIVE WEEKLY SUMMARIES[1]

CURRENT WEEKS, 1940		CORRESPONDING WEEKS, 1939	
December 7	86.9%	December 9	96.6%
December 14	90.8%	December 16	97.7%
December 21	91.1%	December 23	93.9%
Dec. 28 (Holiday Week)	64.3%	December 30	76.2%
January 4, 1941	84.9%	January 6, 1940	88.0%
[2]January 11, 1941	88.4%	January 13, 1940	92.7%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting—Current Weeks					
Ratio Limits	Dec. 7, 1940	Dec. 14, 1940	Dec. 21, 1940	Dec. 28, 1940	Jan. 4, 1941	Jan. 11, 1941
0% to 50%	45	52	45	108	68	40
51% to 100%	251	244	247	181	213	180
Total Mills Reporting	296	296	292	289	281	220

PAPERBOARD OPERATING RATIOS

Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1936	62%	67%	67%	70%	69%	70%	69%
1937	80%	86%	86%	88%	85%	77%	66%
1938	54%	60%	61%	57%	58%	56%	57%
1939	60%	67%	71%	69%	64%	67%	63%
1940	71%	70%	69%	70%	76%	79%	72%

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1936	75%	78%	82%	80%	74%	72%
1937	74%	69%	65%	55%	45%	73%
1938	66%	66%	70%	65%	59%	61%
1939	72%	74%	84%	81%	71%	70%
1940	74%	72%	79%	77%	71%	73%

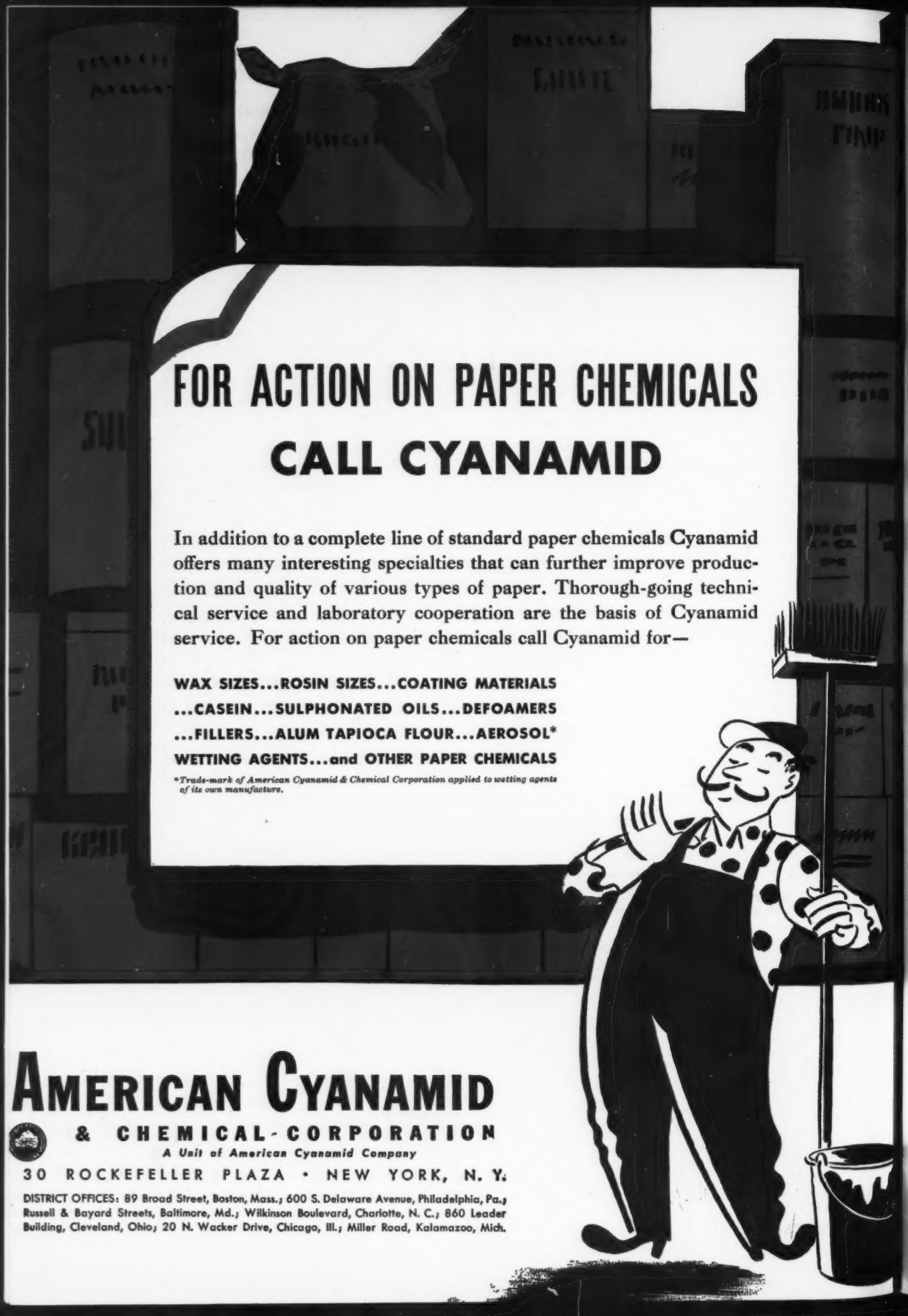
Week end. Dec. 7, 1940—78%
Week end. Dec. 14, 1940—79%
Week end. Dec. 21, 1940—80%
Week end. Dec. 28, 1940—48%
Week end. Jan. 4, 1941—59%
Week end. Jan. 11, 1941—77%

[1] Production-capacity ratios are based upon six-day capacity ratings which are adjusted periodically to correspond with the ratings reported by individual companies. Ratios are, subject to revision until all reports are received.
[2] Preliminary figure.

Bagley & Sewall Co. Busy

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., January 20, 1940—It is reported here that the vise department of the Bagley & Sewall Company has received a large government contract calling for an expenditure of $31,987.59 for the navy department. This latest order follows closely upon the receipt several months ago of a large order from the British government calling for completion of 3,200 vises late in the summer. The defense program of the government is held responsible for the boom in the vise department as these are a necessity in every machine shop. The company produces a large variety of vises ranging from small to large for use in all kinds of work. The navy order will amount to approximately 3,000 vises. There are several consignment points. It was stated by an official of the concern that during the past week a shipment of 1,000 vises for use in the army was made. The shipment constituted almost a carload. At the present time the vise department is employing about forty persons.



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Section of the
Technical Association of the Pulp and Paper Industry

Edited by Ronald G. Macdonald, Secretary

Developments in Paper Testing during 1939–1940*

By B. W. Scribner[1]

This résumé of general developments in paper testing is one of the reports contributed annually by the Paper Testing Committee of the Technical Association of the Pulp and Paper Industry (TAPPI). This report covers the period November, 1939 to October, 1940, inclusive. The numbers contained in the text refer to the appended bibliography.

Physical Properties, General

Considerable further effort was made in improvement of methods for measuring the permeability of paper to fluids. Dubois and Tressler described the testing of the water vapor permeability of various sheet materials used to wrap frozen food products *(1)*. Tests for the water vapor permeability of commercial building papers were made by Heinig, Teesdale, and Curran *(2)* and by Babbitt *(3)*. Brabender reported the final findings, including a proposed testing procedure, of the TAPPI subcommittee on Water Vapor Permeability. A cell sealed with the membrane under test, and containing either water or a dessicant, is used *(4)*. The method with some modifications was adopted by TAPPI *(5)*. Several reports on testing for water resistance as related to degree of sizing were issued. A test in which the transudation of water is detected by a fluorescent indicator was described by Van den Akker, Nolan, Dreshfield, and Heller *(6)*. A modified form of the Currier size tester, an electrolytic type, was studied by Bradbent, Brown, and Harrison for the British Paper Testing Committee. They decided that while it was not suitable for adoption as a standard, it is at present the simplest and most accurate method of determining, on a comparative basis, the water resistance of the majority of sized papers *(7)*. Sylvan described a new form of electrolytic tester *(8)*. An instrumentation report of The Institute of Paper Chemistry contained a summary of the current theoretical conceptions of the flow of liquids and solutions through paper and similar materials *(9)*. Edge and Harrison in a further report of the British Paper Testing Committee stated that none of the electrical, curl, dry indicator, and ammonium-thiocyanate-ferric chloride methods for size resistance was suitable as a basis for a standard procedure *(10)*. The photoelectric determination of the permeability of paper to fluids was discussed by Vincent *(11)*.

New forms of apparatus for measuring the expansion or contraction of papers with changes in moisture content were described by Van den Akker *(12)*, and by Bialkowsky and Probst *(13)*. The Technical Association of the Pulp and Paper Industry adopted, as a tentative standard for the purpose, a method based on apparatus developed by Weber and Geib, *(14)*.

A comparison between the mode of operation and construction of the Mullen and the Schopper-Dalén bursting strength testers, and the test results obtained with them, was reported by Erik *(15)*. Reardon and Minor gave the results of an investigation made to find the cause of discrepancies in Mullen tester values occurring between different laboratories. They concluded that the tester can be used satisfactorily if each value is the average of not less than 20 determinations *(16)*. A method for obtaining the tensile strength of paper perpendicular to the plane of the sheet was described by Brecht and Blikstad. The paper is glued between two wooden blocks and the force required to separate the blocks is determined with the ordinary type of tensile testing machine *(17)*. TAPPI published a revision of its standard method for testing folding endurance. The M. I. T. type of instrument was made an alternate standard with the Schopper type *(18)*.

The Institute of Paper Chemistry, in one of its instrumentation reports, gave the results of an investigation of the Clark softness test. This consists in determining the overhang of a strip which, when clamped at one end and rotated through a right angle, will just fall over in the direction turned. It was found that the test values correlated well with flexural rigidity, and that they were more accurate than those obtained by the Gurley method *(19)*. Bekk gave the results of an investigation made with an improved form of the stiffness tester previously described by him. The sample is clamped between clips, so that it forms a semicircular arc, and the arrangement is placed on a pan of a balance adjusted to the equilibrium position. The clamps are lowered so that the arc touching a glass plate is deflected. The weight necessary to be added to the balance to produce equilibrium in this position measures the resistancy to

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[1] Chairman, TAPPI Paper Testing Committee, National Bureau of Standards, Washington, D. C.

bending *(20)*. In a form of stiffness tester described by Brecht and Blikstad, one end of the test strip is fixed to a cylinder so that it follows the curve of the cylinder for a certain distance, a weight being attached to the other end of the strip. The force required to rotate the cylinder is taken as the basis of the measurement *(21)*.

Relative to testing for "printing smoothness," The Institute of Paper Chemistry found that for the samples tested, the Gurley-Hill S-P-S tester measured in a reproducible manner certain properties of paper similar to those measured by the Bekk smoothness tester and the Gurley densometer *(22)*. Beazley gave a theoretical discussion of the relation of smoothness and oil permeation tests to printing quality *(23)*. Larocque summarized his studies on the printability of paper, and referred to similar work by other investigators *(24)*.

A simplified form of their curl tester was described by Carson and Worthington *(25)*.

Adrian and Graff, in a discussion of the various methods for count of dirt particles in pulp, stated that for a method to be reproducible, a counting box with transmitted illumination must be used, and the type of light, distance of the light source from the sheet, and height of the eye point above the sheet, must be standardized. They give recommendations in these respects *(26)*.

Factors in favor of using 50% relative humidity in conditioning paper, instead of 65%, were presented by Kantrowitz and Spencer *(27)*.

A revision of the TAPPI standard for sampling paper was published *(28)*.

Carson reviewed the various methods of determining the size of pores in paper and proposed a new method which takes advantage of the fact that the coefficient of slip of air in viscous flow through paper is a function of pressure. From the Meyer equation, the average effective pore radius is evaluated in terms of the air permeability values at two pressures *(29)*.

Optical Properties

Papers presented at a symposium on spectrophotometry, held at the TAPPI 1940 Annual Meeting, included: "A survey of spectrophotometers" by K. S. Gibson; "Survey of abridged spectrophotometers" by Van den Akker; "TAPPI survey of color instruments" *(30)*. W. E. Rand discussed spectrophotometric colorimetry, and outlined the advantages of numerical over visual measurements of color *(31)*.

Gruenman discussed the use of the quartz lamp and ultraviolet rays for the analysis of paper *(32)*.

The possible applications of the polarization microscope to fiber analysis, fiber identification, and for detecting defects, were discussed by Herzog *(33)*. Butterfield gave practical information on photomicrographic equipment and its use *(34)*. Launer described apparatus developed for studies of the photochemistry of sheet materials. The problems involved in such studies are discussed, and data are presented to show the extent to which various important requirements have been met in the design of the apparatus *(35)*.

A comprehensive discussion of the measurement of opacity of paper was given by Harrison. The literature is reviewed and theoretical considerations are discussed. Of the many means used for the measurement, he concluded that for all ordinary purposes, the use of contrast ratios, or better, printing opacities, taken under certain specified conditions, are to be preferred. Transmission measurements are not recommended except for special purposes *(36)*.

Fiber Testing

Hertel discussed a method of fiber-length analysis using the fibrograph. This is an optical instrument employing photovoltaic cells for scanning samples of parallel fibers and tracing a type of length-frequency curve. It is said that the instrument makes possible rapid measurement of fiber length and fiber-length uniformity of raw fiber samples *(37)*. In an article by Noll, it is stated that at the suggestion of the German subcommittee for Fiber Analysis, standardized dyes of maximum purity for fiber analysis have been made available by Merck in Darmstadt *(38)*. Tests for identification of synthetic fibers were described by Skinkle *(39)*. Carlgren described a method for the quantitative determination of groundwood fibers by a chemical method. Such fibers contain hemicelluloses which are converted into sugars by treatment with 1% hydrochloric acid and Fehling solution. The groundwood content is calculated from the amount of sugars formed *(40)*.

Chemical Properties

Launer discussed the retention of aluminum ion and hydrogen ion in papers. Among other findings, studies of fiber alum-water mixtures showed that aluminum ion is selectively retained by the fibers, and that the amount of aluminum salts in papers is thus much larger than that calculated solely from the concentrations involved in the manufacture of the papers *(41)*. Launer and other investigators have shown that pH values obtained by hot extraction of paper are lower than the actual values because of hydrolysis of aluminum salts, therefore they recommended cold extraction. In a discussion of this, Minor and Farmer express the opinion that hot extraction should be used if the stability of the paper is being tested, because the releasing of acidity in hot extraction is considered normal to natural aging of paper, and parallel to the evaluation of the durability by oven aging. They suggest the desirability of using both cold and hot extractions *(42)*. Wehmer reported the results of cooperative trials of the hot and cold extraction by a TAPPI subcommittee *(43)*. A method for determining acidity of paper involving the use of sodium terephthalate solution was described by Browning and Kimble. In contrast to the water extraction method, the total acidity is determined by a single treatment *(44)*.

The Hart moisture meter was described. This is a direct-reading electrically operated device *(45)*. In a discussion of the determination of moisture content, Ainslie and Underhay give in detail methods of sampling, weighing, drying, and expressing the results. They indicate sources of error and show how errors may be reduced to a minimum *(46)*. A revision of the TAPPI method for determination of moisture was published. The method has been improved by more adequate provisions for testing deliveries of paper *(47)*.

Wehmer reported cooperative tests of a TAPPI subcommittee *(43)* on a proposed TAPPI method for pentosans based on a modified procedure developed by Launer *(48)*. The method was adopted by the Association *(49)*. Revisions of the standard methods for ash *(50)* and paraffin *(51)* in paper were also adopted by the Association.

Properties of Specific Products

A compression testing machine for boards and containers was developed by the Quinn laboratories *(52)*. Carlson discussed factors affecting bending tests of corrugated board *(53)*. Quinn in discussing bursting strength tests of double-face corrugated board stressed the importance of making a sufficient number of determinations to obtain a true average. He recommended from 30 to 40 *(54)*. Hawley stated that in evaluating the strength characteristics of corrugated containers, deflection, end-to-end compression loads, shock loads, and resistance to moisture, puncture, and abrasion, should all be considered *(55)*.

The sensitivity of photographic papers was discussed by Jones and Morrison. A new instrument developed for study of sensitometric characteristics is described and values are given for current types and grades of photographic papers *(56)*. Morrison described an instrument developed for measurement of contrast value of photographic papers which simplifies the procedure and makes the determination rapid and easy, as well as accurate *(57)*.

A means of determining the number of layers of paper in laminated plastics was described by Werner *(58)*.

General

The chairman reported the activities of the Paper Testing Committee of TAPPI for the preceding year. New methods completed comprised the ground-glass method for water resistance, creasing quality, identification of specks and spots, silver tarnishing test, and color. Revisions of the TAPPI Standards for dirt count, sampling, starch, resin, alpha-cellulose and reducible sulphur, were completed *(59)*. He prepared the usual annual review of developments in general in paper testing, the report containing mention of 82 publications *(60)*. Further mention of the TAPPI standardization of paper testing methods is made by Griffin in his annual report of the activities of the TAPPI Standards Committee *(61)*. Cottrall, chairman of the British Paper Testing Committee, discussed the purpose and activities of the committee, its future work, and the lines along which it should be carried out *(62)*.

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A New Approach to the Permanganate Number Test

By Robert R. Fuller[1]

Abstract

The variables which affect the accuracy of the permanganate number are briefly discussed. A suggested method using more concentrated solutions is presented. Correlation of this number with lignin content, hypochlorite bleach demand, Rue partition point, acid first-stage partition point, Roe number, and burst is shown. Methods used for the determination of the various pulp properties correlated are briefly described.

[1] Member TAPPI, Chief Chemist, Gulf States Paper Corp., Tuscaloosa, Ala.

For sometime the permanganate number has been used as an index of the degree of cooking or softness of the pulp. In addition to the permanganate number, a chlorine number and a bromine number have been proposed. These tests have been the subject of considerable controversy, particularly in the mill, and as a result their usefulness has been questioned.

Among the methods which have been proposed are: Seiber, Wiles, TAPPI Standard, Oestrand, Tingle, Roe, Joachim, and Roschier, but so far as the literature is concerned none of these tests are a definite measure of anything. The Oestrand and Roschier

numbers have been correlated with an arbitrary classification of pulp hardness, while a number of the others have been correlated with Roe number. One mill has compiled a table comparing its number with the other numbers. All of these numbers require interpretation in the individual mill and, although there should be some connection between the reaction with the pulp and pulp properties, the test itself has not been made a measurement of any specific quality.

A study of the permanganate number was undertaken using the following method for its determination.

Method

Take a 5- to 10-g. aliquot part of the pulp sample and stir it into 300 cc. of water. Form a pad of this pulp on a small pad former. Run the pad through a previously set and checked wringer 3 times. Weigh out enough of the wringer dry pad to give a 1-g. dry sample.

Place the sample in a pint fruit jar containing 150 cc. of 0.02*N* permanganate and 50 cc. normal sulphuric acid. Stir the mixture for 1 min. and add 100 cc. of 0.02*N* ferrous ammonium sulphate. Stir for ½ min. and filter out the pulp. Titrate a 50-cc. aliquot of the filtrate with 0.02*N* potassium dichromate using barium diphenylamine sulphonate as the indicator. (cc. of dichromate × 6) + 50 = true permanganate number [(cc. of dichromate × 3) ± 50 = mill number].

From actual operation a definite range was found within which the pulp desired was obtained. Operating results, however, varied considerably, and over a period of time there was apparently no close correlation of permanganate number with mill results.

In searching for causes of this lack of correlation the possible inaccuracies or variables of the method were examined. The following factors were found to affect the number:

(1) Agitator: Variations in the size and shape of agitators made large differences in permanganate number. When using a metal circle agitator a difference of 0.15 in. diam. changed the number 3.6 points.

(2) Container: A change in the size or shape of the container in which the mixture was agitated changed the permanganate number.

(3) Stirring time: Increasing the reaction time increases the number. Apparently, the permanganate consumption does not reach a constant in a reasonable length of time, and some specified reaction time must be used.

(4) Stirring speed: Stirring speed must not vary during a single reaction, and must be the same for each, or the numbers will not check.

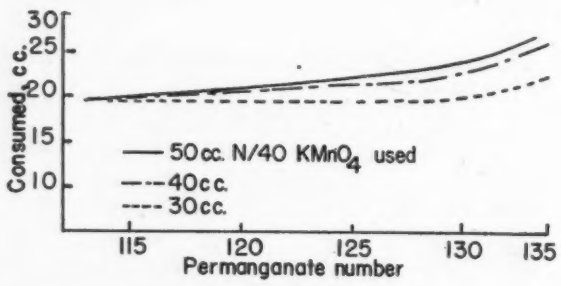

FIG. 1.
Consumption of $KMnO_4$ by 1 g. of Pulp.

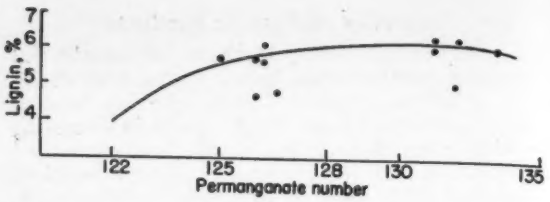

FIG. 2.

(5) Temperature: The mixture temperature as would be expected has a marked effect on the number. With increasing temperature, consumption of permanganate by pulp is materially increased. This effect of temperature is noticed even when increased stirring time is used or when the ratio of permanganate to pulp is increased. A difference of 20 deg. F. made 5 points difference in number. Between winter and summer, or digester floor and laboratory, this is not an unreasonable variation to expect. Determinations can hardly be expected to check under such conditions.

(6) Available permanganate: As the amount of permanganate per unit of fiber is increased the number of course increases. If the pulp has a definite consumption of permanganate you would expect to reach a maximum above which a further increase would not change the number. Such a condition is indicated from our experiments as shown by Fig. 1. Using this method on the so-called harder pulps of higher lignin content, there was not enough available permanganate to bleach the fibers white and a curve comparing it with lignin content tended to reach a maximum regardless of lignin content as shown by Fig. 2. It is necessary then to have enough permanganate present to completely bleach the fibers and to reach a constant for any given reaction condition.

(7) Weight of sample: Probably the greatest variation in number is due to the difficulty of securing an accurate sample quickly. To obtain a sample a large pad of pulp was passed three times through a wringer calibrated to squeeze the pad to a given moisture content. Enough pulp was then weighed out to give 1 g. of dry fiber. Actual weights of dry sample were found to vary as much as 0.1 g. which of course gives a corresponding variation in number.

The tables and figures show the variations we have just discussed.

TABLE I.—VARIATION IN PERMANGANATE NUMBER OF SAME PULP CAUSED BY DIFFERENT SIZES OF AGITATORS

All other factors being held constant.

Diam. of agitator ring	Mill Permanganate no.
0.85 in.	90.1
0.70 in.	86.6

TABLE II.—EFFECTS OF TEMPERATURE UPON THE PERMANGANATE NUMBER OF THE SAME PULP

All other factors being constant.

Pulp	Temperature, deg. F.	Mill Permanganate no.
1	140	95.0
1	120	93.8
1	100	92.9
1	80	86.6
1	60	80.9
2	100	82.1
2	90	80.3
2	80	77.6

TABLE III.—EFFECTS OF TEMPERATURE, INCREASED STIRRING TIME, AND WEIGHT OF SAMPLE UPON THE MILL PERMANGANATE NUMBER OF THE SAME PULP

	60 sec. agitation		120 sec. agitation	
Temperature, deg. F.	Permanganate no. 1.00 g. sample	Permanganate no. 0.50 g. sample	Permanganate no. 1.00 g. sample	Permanganate no. 0.50 g. sample
100	82.1	108.0	87.8	120.6
90	80.3	102.6	86.6	109.8
80	77.6	97.2	85.1	105.6

TABLE IV.—NUMBERS

	N/50 solutions 1 g. samples			
Cook	Dig. test	Lab. check	*N*/25 solutions 1 g. samples	*N*/50 solutions 0.5 g. samples
734	140.6	140.6	211.6	203.2
741	147.4	141.8	224.8	227.2
747	142.4	143.0	244.0	227.2
753	139.4	136.4	199.6	175.6
758	142.4	130.2	216.8	196.0
762	138.2	132.2	170.8	161.2
770	142.4	141.8	242.8	211.6
776	140.6	138.8	202.0	193.6
776	Temp. of reagents raised from 20 to 50 deg. C.			232.0

From our studies we find that this permanganate number is apparently not a definite measurement of anything and none of those suggested in the literature seem much more definite. Resultant numbers obtained by this method could not be duplicated very accurately. The accuracy of the permanganate number is affected by variations in stirrer, container, reaction time, temperature, available permanganate, and method of obtaining 1-g. dry sample of fiber.

In summing up the results of this investigation it was decided that either a more accurate determination which was a measure of something should be developed or the determination abandoned. Work was accordingly started to eliminate the variables of the determination if possible.

The matter of stirrer size, container size, and stirring time should be eliminated if the number under proper conditions would reach a constant. After some study, it was decided the time required to reach equilibrium was too long. Standards were then adopted to eliminate these variables. For the container a 300-cc. erlenmeyer flask; to stir the reaction mixture, a mixer motor, a glass rod stirrer; a stirring time of 1 min. for the reaction mixture; and ¼ min. to take up the excess with ferrous ammonium sulphate was adopted. The only reason for this particular time selection is speed of determination. Numerous ways of obtaining constant temperature both of solutions and reaction mixture are available; but they are complicated and clumsy. After some study the simplest method proved to be the use of small volumes of reagents and boiling dilution water. The higher reaction temperature thus obtained also gave a better bleach. To secure a good bleach and a correct number we have already pointed out that an excess of permanganate must be present in the reaction mixture at the proper concentration. As we did not have enough permanganate present in the method more permanganate was necessary. The method of temperature control, also, as we stated, takes more concentrated solutions. Apparently best results were obtained with 50 cc. of *N*/8 permanganate solution.

Obtaining a 1-g. sample of dry pulp presented the most difficult problem. Numerous ways have been proposed and used: clothes wringer, squeezing, presses, and drying on some type of hot plate. None of these give a correct or satisfactory sample and we find that drying the sample with either acetone or ethyl alcohol gives best results.

From this work we arrived at the following procedure for determination of the permanganate number:

Apparatus and solutions:

1. 1—Gilbert motor equipped with chuck to hold glass stirrer and stand
2. 1—45 deg. angle glass stirrer
3. 1—Half pint fruit jar
4. 1—Buchner funnel and a liter filter flask
5. 1—300 cc. Erlenmeyer flask
6. 1—Stop watch
7. 3—50-cc. pipettes
8. *N*/8 $KMnO_4$ solution
9. *N*/8 ferrous ammonium sulphate solution
10. *N*/20 potassium dichromate solution
11. Barium diphenylamine sulphonate indicator solution
12. 5*N* sulphuric acid solution

Method

Preparation of Sample

Secure a large representative sample of the pulp to be tested, mix it thoroughly, and take an aliquot part for the determination. Make a pad from this aliquot, run it through a wringer three times, and place 5 g. of it in a pint fruit jar. Add 350 cc. of acetone or alcohol, agitate thoroughly for 1 min., and pour the mixture into a buchner funnel. Pull as much solvent from the pad as possible; but be sure to leave it light and fluffy. Place the pad in an oven at 105 deg. C. to remove the solvent (acetone).

We have found that the solvent, particularly the acetone, removes the last traces of black liquor leaving the fiber a light brown. The condition of the pad is important. It must be finished in a light fluffy condition so the 1-g. sample will be free of fiber clusters or bundles. Drying the pad hard or drying on a hot plate tends to give small clots of fibers that do not bleach well in the time allowed for reaction.

Determination

Weigh out 1 g. of the moisture-free sample on an analytical balance. (For extreme accuracy a desiccator and weighing bottle must be used.) In ordinary routine allow the pad to reach equilibrium with the surrounding air before weighing. Carefully pipette 50 cc. of *N*/8 permanganate solution into a 300 cc. erlenmeyer flask, with a pipette add 10 cc. of 5*N* sulphuric acid, and pour in 90 cc. of boiling distilled water. Moisten the pulp sample with distilled water and squeeze it dry. Place it in the reaction mixture and stir for 1 min. Add 50 cc. of *N*/8 ferrous ammonium sulphate solution with a pipette, stir for 15 sec., filter the mixture on a screen, and pipette out a 50 cc. aliquot. Add 6 drops of indicator and titrate to a light purple with *N*/20 potassium dichromate.

The cc. of dichromate is the permanganate number. Determinations should check within 0.1 cc. The permanganate consumed is 0.625 times the number.

This method gave us a permanganate number which apparently could be duplicated accurately, but it was still not a measure of anything definite. In casting about for something specific in the pulp with which to correlate it lignin content was chosen. The idea of measuring lignin content is not of course new and at least one other mill has worked out such a correlation. To do this in our case the permanganate number of the pulp was determined and then the lignin content determined by the 72 per cent sulphuric acid method. Approximately 150 determinations were made all but 31 of which were within 0.5 per cent of the curve. Those points which were off more than 0.5 per cent and which we rechecked showed the error to be in the lignin determination. The 72 per cent sulphuric acid determination is tricky and unless great care is taken the results will be in

error. Our resultant curve is shown as Curve A in Fig. 3. As a further check on the method, samples were obtained from both the digester and thickener of another southern mill making kraft pulp for board. Results correlated well with our results, but these samples were dried too hard and some of the figures were high.

As the lignin content correlated well with permanganate number we decided to try a correlation with bleach demand, and the bleach plant so-called partition points. For the bleach demand a 50-g. sample of wringer dry pulp (20 g. moisture-free) was placed in ½-gal. mason jar. Twenty per cent available chlorine based on the moisture-free weight of pulp was added as calcium hypochlorite and the consistency made up to 2 per cent. This mixture was then stirred gently for 3 hours. The pulp was filtered out and a 50 cc. aliquot of the filtrate titrated for residual chlorine using potassium iodide and 0.1*N* sodium thiosulphate. Duplicate determinations were made. Results checked and a fairly good correlation was obtained as shown by Curve B in Fig. 3.

In determining the partition points an acid chlorination was tried first, but it was unsuccessful. The partition point for a Rue first stage with 90 min. retention time was then tried. Partition points were determined by the following procedure:

Twenty g. of dry pulp obtained by weighing the proper amount of a wringer-dry sample were placed in a ½ gal. mason jar. Four of these samples were used. A different quantity of chlorine as chlorine water was added to each sample calculated as a percentage of the dry fiber chosen to cover the probable chlorine demand of the pulp. The consistency was made to 3 per cent, the lid placed tightly on the jar, the contents thoroughly shaken, and the mixture allowed to stand for 5 min. At the end of 5 min. the proper amount of lime as lime water was added and the mixture thoroughly shaken. At the expiration of 90 min. the reaction mixture was checked for chlorine residual and the amount of initial chlorine to add to give 0.1 per cent residual estimated. As can be seen

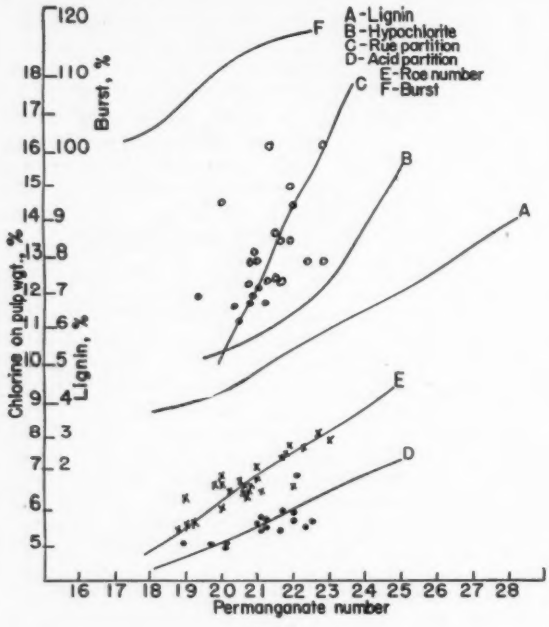

Fig. 3.

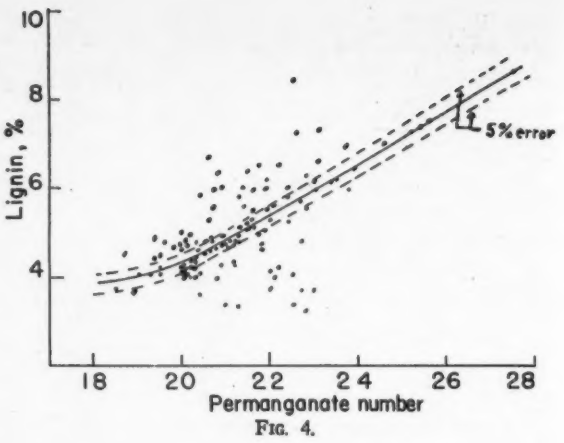

Fig. 4.

from the curve C in Fig. 3 a good correlation with permanganate number was obtained.

After correlating the Rue number, the acid chlorination was again attempted. We found by adjusting sample and container size so the jar was filled completely consistent results could be obtained. To determine this chlorine demand several 20-g. samples were used and increasing amounts of chlorine as chlorine water added. At the end of 30 min. retention time, chlorine residuals were determined and the amount of initial chlorine to give 0.1 per cent residual estimated. Results of these determinations correlated with the permanganate number satisfactorily. Results are shown by Curve D Fig. 3.

To complete the relationship with chlorine demand, the Roe number as outlined in *Ind. Eng. Chem.*, 16, no. 8 was correlated with permanganate number. For this determination an orsat apparatus was adapted. Results are given by Curve E Fig. 3. Correlation was good.

Over a 6-months period the permanganate number has been determined daily by this method on pulp samples taken hourly from the Oliver thickener in the screen room. For the determination the samples are lumped into four shift samples. The permanganate number was correlated with the shift average burst and tear test on our TAPPI sheet machine using a small rod mill for refining. A definite correlation of burst test with number was obtained. There seemed no correlation with tear.

From our results this permanganate number seems worth careful consideration. It is not being presented, though, as a permanganate number to end all permanganate numbers; or an analytical method for the various things with which it was correlated; but as another suggested approach to the problem. To show the accuracy of correlation Fig. 4 has been prepared showing the points obtained. We hope to correlate it further with mill operation and bleach plant operation. It seems its further study by others interested would prove valuable. A continued study of the method itself might give a still better method. Perhaps a more concentrated solution would be better, an oxalic acid back titration might be used in place of ferrous ammonium sulphate and dichromate, there are possibilities of an electrometric titration using only permanganate, numerous improvements are possible in procedure, and a closer correlation with lignin or other pulp constituent can be made. We feel the method is worth careful consideration.

TAPPI Water Committee Report for 1940*

By L. B. Miller[1] Chairman

The Water Committee submits the following report of its activities during the year 1940.

Project No. 70—Standard for White Water Analysis. TAPPI Standard M 400 p-36.

A preliminary revision of this standard was placed in the hands of the water committee just prior to the meeting of the committee at the annual convention in February 1940. At the meeting of the committee in February 1940, the standard was thoroughly discussed. Based upon the discussion and upon later correspondence the standard has been revised twice more. At the time this report is written (December 7, 1940) the revised manuscript has been submitted to the Standards Committee through W. G. MacNaughton, chairman of the Engineering Division, for consideration as a Tentative Standard. The work on this standard has been done primarily by William F. Mitchell, a member of the water committee.

Work on this project appears to be completed and it is recommended that this project be closed out.

Project No. 112—Survey of Paper Mill Water Requirements

This project was begun early in 1939. Two questionnaires were submitted to the industry to obtain information on this subject. The complete results were compiled to form Special Report No. 298 entitled "Survey of Paper Mill Water Requirements", issued December 14, 1939. The major portion of the work of compilation and editing was done by Vincent F. Waters of TAPPI headquarters staff and the chairman of the Water Committee.

A short resume of this survey was presented at the February 1940 annual meeting at the water session and subsequently published in the PAPER TRADE JOURNAL and in the *Technical Association Papers* for 1939-40.

It is felt that this phase of the work is now completed and it is recommended that this project be closed out.

Project No. 119—Analysis of Water (Revision of TAPPI Standard T 620 m-35).

This work has been assigned to Miss L. E. McGrath, a member of the water committee, who has recently submitted a preliminary revision of this standard. Work on this project should be continued until a satisfactory revision has been achieved.

TAPPI Tentative Standard E 2 p-40 entitled "Flow Measurement of White Waters and Wastes" has now stood for one year. The water committee was therefore canvassed and it was voted to advance this tentative standard to an official standard. This recommendation has been transmitted to the Standards Committee through Mr. MacNaughton.

Project No. 120—Monograph on Water for the Pulp and Paper Industry

Early in the spring of 1940 R. G. Macdonald suggested this project to the Water Committee. Following this suggestion the writer outlined a monograph on this subject. At a meeting between W. G. MacNaughton, chairman of the Engineering Division, Vincent F. Waters of TAPPI headquarters and the chairman of the Water Committee, this outline was thoroughly criticized and extensively revised. A tentative list of authors for the different chapters to serve as a subcommittee for the Monograph, was also prepared. The revised outline of work and proposed list of authors was then approved by Mr. MacNaughton and subsequently by Mr. Macdonald who then secured approval from the Executive Committee to proceed with the work. The Monograph subcommittee as finally chosen consisted of the following:

L. B. Miller, Subcommittee chairman; J. D. Fleming, E. J. Hopkins, C. E. Imhoff, R. B. Martin, R. O'Donoghue, E. P. Partridge, J. G. Patrick, E. Nordell, V. F. Waters.

On July 1st letters were written by the chairman, to the several proposed members of the subcommittee, inviting them to participate in the preparation of the Monograph and outlining each chapter in detail. At the time this report is written all but one of the chapters have been received, reviewed and revised by the author where necessary. These chapters are now in the hands of Mr. Macdonald at TAPPI headquarters. The one remaining unfinished chapter has been promised for the near future. It is anticipated that publication of the Monograph will proceed as rapidly as is compatible with other work. This project should be continued until publication of the Monograph is completed.

Personnel of the Water Committee

L. B. Miller, Chairman; C. M. Baker, E. N. Poor, L. E. McGrath, R. B. Martin, W. F. Mitchell, J. G. Patrick, S. T. Powell.

It is recommended that the above committee be continued as indicated. There has been one resignation from Water Committee during the past year in the case of W. L. Cassiday, whose change of positions took him away from further active work on water. He was replaced on the committee by E. N. Poor of W. C. Hamilton & Sons.

The subcommittee for the water monograph consists of the following:

L. B. Miller, subcommittee chairman; J. D. Fleming, E. J. Hopkins, C. E. Imhoff, R. B. Martin, R. O'Donoghue, E. P. Partridge, J. G. Patrick, E. Nordell, V. F. Waters.

The subcommittee has now accomplished its purpose and should therefore be discharged from further duty.

The subcommittee on the white water consists of:

C. M. Baker, subcommittee chairman, P. S. Billington, F. J. McCourt, R. B. Robertson, Jr., R. J. Schadt, E. R. Schafer, H. J. Skinner.

This subcommittee has been substantially inactive for the past three years. At the present time a special effort is being made by the writer to have this subcommittee develop an active program of work for the coming year. It is recommended that the subcommittee be continued for another year with the existing personnel.

* To be presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, Roosevelt Hotel, New York, N. Y., Feb. 17-20, 1941.

[1] Technical Director, Keasby and Mattison Company, Ambler, Pa.

Other Work for 1941 by the Water Committee

1. Boiler Feed Water

Consideration has been given by the Water Committee to the preparation of specifications for boiler feed water quality for the pulp and paper industry. For many years this subject has been very actively pursued by appropriate committees of the A.S.M.E. The A.S.M.E. code for water quality has been followed by most industries, boiler insurance companies, etc. More recently the A.S.T.M. has taken an interest in boiler feed water quality. Within the past year or two researches on boiler waters has suggested strongly that existing standards and specifications are insufficient to provide for proper and safe boiler operation, particularly for boilers operating at high pressures. Knowledge of the subject is in a state of flux. Several active research programs are in progress, looking toward the clarification of the subject. It is suggested that TAPPI should *not* engage in research activities along this line which is being adequately carried on by other organizations. Under the circumstances it is recommended that TAPPI await the results and conclusions of such organizations as the A.S.M.E. and the A.S.T.M. and follow their recommendations for boiler feed waters.

2. Quality of Process Water for the Manufacture of Pulp and Paper Products

The Water Committee has had for several years, as one of its objectives, the preparation of specifications or standards of process water quality for the manufacture of different types and grades of pulp and paper. When the questionnaires upon the "Survey of Paper Mill Water Requirements" were prepared in 1939 one of the primary objectives in submitting these questionnaires to the pulp and paper industry was to obtain information which it was hoped would form the basis for such specifications and standards. The information obtained was wholly inadequate for this purpose and it was rather apparent that adequate informtion was not yet available in the industry. When the Monograph on Water was being prepared, attempts were made to persuade several different men who rank high in their knowledge of process water, to prepare a chapter on this subject. All of them declared that the information at their disposal was wholly insufficient for the task. Further questionnaires to the industry at this time would probably not yield much more information than was previously obtained. However, the pulp and paper industry is rapidly becoming much more water conscious. The Water Committee is attempting to foster this trend in every way possible. What is needed, however, is further factual evidence. With this thought in mind it is planned to begin the organization of a symposium on this subject to be given at the February, 1942, TAPPI annual meeting. The work already done, and the publication of the water monograph during 1941, should foster interest in this subject so that a very worth while group of papers should be forthcoming by the time of the next yearly meeting in 1942. Then while interest is still strong and directly following the 1942 meeting, it is recommended that a detailed questionnaire on process water used in the manufacture of certain types of paper, be submitted to those manufacturers who make the selected types of paper. This questionnaire should be most carefully prepared during 1941 so as to be in readiness for mailing directly following the 1942 meeting. If the results from the questionnaire then warrant, standards of water quality may be prepared for those types of products covered in the questionnaire.

After much thought the writer suggests the following general policy for directing the collection of information and the preparation of standards for process water quality. The welfare of the manufacturer should be the prime consideration in this work. Since the problem is one of industrial economy, it is equally as important to seek examples of low quality water successfully used as it is to obtain examples of the unsatisfactory effects of small quantities of impurities in water upon mill operation or product quality. In the proposed standards the allowable limits of impurities should take into consideration those limits which are normally safe rather than those very low limits which would always be safe for a given operation or product, but which would limit industry to the relatively fewer sources of raw water which are of high purity or which can be rendered so economically by appropriate treatment.

Additional Papers for TAPPI Annual

Allen Abrams, chairman of the Bacterial Control Methods Committee of the Technical Association of the Pulp and Paper Industry, has announced the following papers to be presented at the annual convention to be held at the Roosevelt Hotel, New York, N. Y., on February 17-20, 1941.

"Microbiological Problems Related to Water" by **A. E. Griffin, Wallace & Tiernan Company.**

"Economic Losses due to Microorganisms in Pulp Systems" by J. R. Sanborn and R. A. Gillotte, New York State Agricultural Experimental Station.

"Accuracy of Bacterial Counts from Paperboard" by R. E. Breed, New York State Agricultural Experimental Station.

"Bacteriological Technique for Studying the Decomposition of Felts," by J. W. Appling, Olga A. Smith and Douglas Fronmuller, Institute of Paper Chemistry.

In addition the following papers are being sponsored by the Container and other committees:

"Some Factors Affecting the Compressive Strength of Fiber Boxes," by T. A. Carlson, Forest Products Laboratory.

"Present Status of Stiffness Testing in the Container Industry," by Pierre Drewsen, Hinde & Dauche Paper Company.

"Some Applications of Statistical Analysis to the Interpretation of Routine Tests," by T. A. Pascoe and Marian Fraser, Nekoosa-Edwards Paper Company.

"Factors in the Quality Control of Thermoplastic Coated and Waxed Papers" by T. W. Noble, Detroit Wax Paper Company.

TAPPI Delaware Valley Section to Meet

The Delaware Valley Section of The Technical Association of the Pulp and Paper Industry will meet on Friday evening, February 7, at the Engineers Club, Philadelphia, Pa. The guest speaker will be Dale Purves, Treasurer and Operating Manager of the Stetson Hat Company, who will talk on "Industrial Relations."

Index, Technical Section, Paper Trade Journal Volume 111, July to December, 1940

Prepared by Clarence J. West, Chairman, Committee on Abstracts and Bibliography, TAPPI

The page numbers in the following index refer to the continuous paging of the *Technical Section* and have no relation to the pagination of the individual numbers of the PAPER TRADE JOURNAL.

This volume of the *Technical Section* contains no abstracts of periodical articles or of patents; therefore, all entries refer to original articles. Authors' names are printed in capitals.

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New England TAPPI Discusses Carbonates

The New England Section of the Technical Association of the Pulp and Paper Industry met at the Roger Smith Hotel, Holyoke, Mass., on Friday evening, January 17. Norman I. Bearse of the Champion-International Company, Lawrence, Mass., presided as chairman.

Arthur Brooks of the Raffold Process Corporation was the guest speaker and talked on "Calcium Carbonates." The physical and chemical properties of the carbonate fillers such as Raffold and calcium carbonate, were discussed, and also the use of these materials in coated and filled paper. It was claimed by the speaker that the ground natural carbonates, as ground chalks and limestones, were inferior in quality to Raffold and other precipitated carbonate fillers for use in paper manufacture. The main qualities imparted by carbonate fillers of the correct particle size were stated to be whiteness, opacity and improved printing qualities.

When used as coating pigments, the properties imparted by Raffold and other carbonate fillers of the proper quality, in comparison with other coating pigments, were outlined and illustrative coating formulae given for various types of paper, such as coated book, cardboard, playing card and glazed papers.

In filled papers, the two chief problems associated with the use of carbonate fillers, which are foam and the destruction of the sizing, were discussed and the development of satisfactory procedures for overcoming these problems.

The very large tonnage of carbonate filled paper produced since the invention of these processes was commented on and some practical experiences in the manufacture of various grades of these papers were given.

Following the presentation of this paper, the Soundview Pulp Company's new technicolor film of their pulping operations and their sound film "Mystic Fiber" were shown.

Among those present were J. C. Barthel, N. I. Bearse, R. G. Bettes, Richard T. Brigham, W. J. Burke, Arthur M. Brooks, Chas. Champion, Ken Coachman, R. F. Blount, Ralph L. Carr, Lester W. Crouse, Chas. Davidson, C. J. Enemark, Edward Engel, Harry Duston, H. M. Federhen, W. L. Foote, Charles I. Horton, O. F. Hutchinson, R. F. Irwin, Dr. Werner Kaufmann, C. H. Kent, Lena Kelley, Helen Kiely, John Kennedy, Chester G. Landes, Frank H. Leonard, John Leecock, C. C. Loomis, Bob Mannheim, James Moriarty, H. L. Mellen, R. D. McCarron, D. B. Morris, W. A. Nivling, James Lees, A. L. Perry, J. P. Phelps, E. A. Radant, C. L. Reece, John T. Reardon, E. O. Reed, C. P. Robinson, W. B. Sherry, L. N. Smith, James Spadaro, T. L. Stirling, O. R. Steffens, A. F. Stackwell, B. E. Teale, J. J. Thomas, L. B. Tucker, and Harry L. Wechter.

Lake States TAPPI Discusses Lime

The Lake States Section of the Technical Association of the Pulp and Paper Industry met at the Conway Hotel, Appleton, Wis., Tuesday evening, January 14th. M. L. Downs of the Thilmany Pulp and Paper Company presided as chairman.

R. W. Smith, director of research of the Ste. Genevieve Lime Company, Ste. Genevieve, Mo., presented an interesting discussion on chemical lime.

Among those present were:— Peter B. Borlew, O. W. Calleghan, H. W. Bialkowshy, M. H. Bennett, Martin Burke, Jr., James B. Clarke, Art Coffin, C. William Converse, H. C. Crandall, Roy L. Davis, G. K. Dickerman, Phil Dixson, M. L. Downs, R. B. Elliott, G. F. Enderlein, J. A. Extrom, W. S. Grimes, J. H. Graff, Peter S. Hanson, Kenneth D. Hay, Harold H. Heller, Axel Hyttinen, E. C. Jacobi, Arthur Jelinek, W. A. Johnson, Charles Koon, P. B. K'Burg, Stephen Kukolich, N. L. Malcove, Hoke Martin, Wm. H. Monsson, L. A. Moss, A. W. Neubauer, John Olsen, Lester Olsen, Orval Olsen, P. A. Paulson, T. A. Pascoe, Shirley Parsons, Wm. J. Plank, A. Phillips, T. R. Probst, Robert O. Ragan, Joseph S. Reichert, H. A. Rothchild, Herbert W. Rowe, Harold B. Saloman, F. W. Schneider, Ralph W. Smith, C. W. Steele, W. H. Swanson, H. L. Voss, H. Wenberg, F. G. Wheeler, and J. C. Wollwage.

Amthor Occupies New Building

The Amthor Testing Instrument Company, Inc., recently purchased the two story factory building at 45-53 Van Sinderen avenue, Brooklyn, N. Y., and has moved its plant to that location. Larger and more desirable facilities are now available and will enable the company to take care of a greater volume of business.

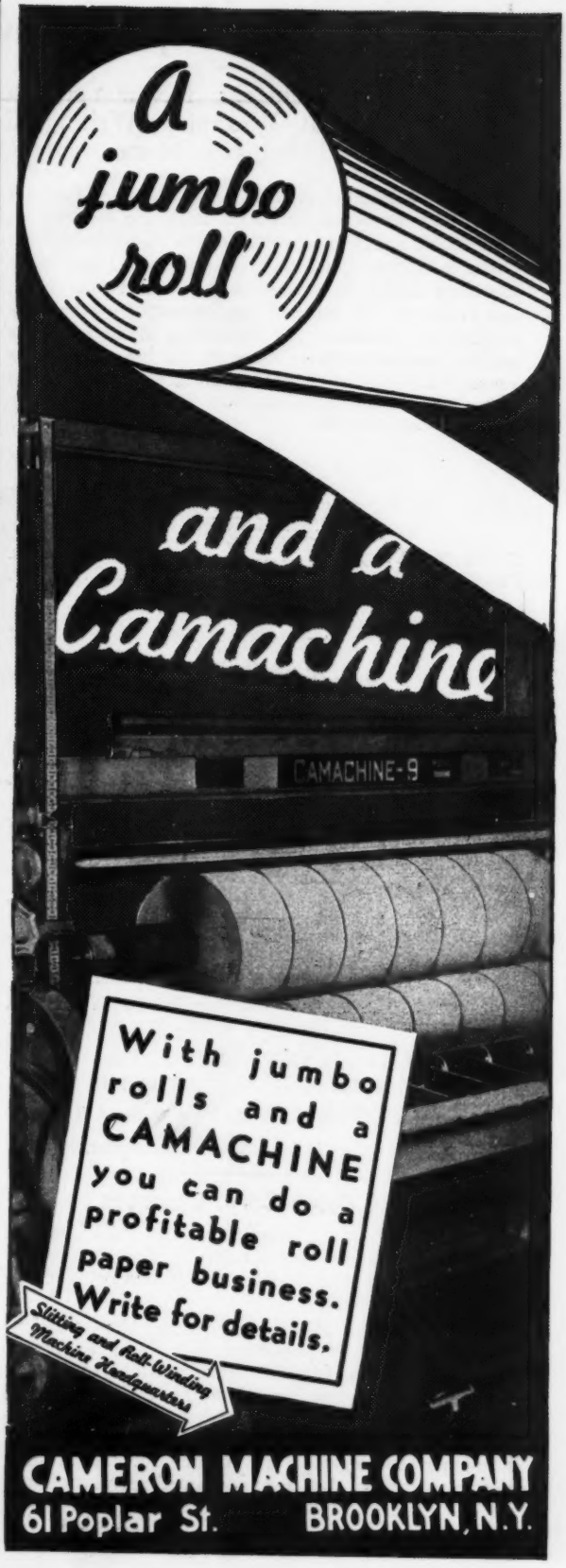
MASTER CRAFTSMAN

AT SHRINKING ORR FELTS

On the most modern felt fulling mill in the world, this craftsman is shrinking an Orr Felt to the correct size. A standard operation in felt manufacture, this process requires eagle-eyed supervision, for shrinking a felt as much as one-half in size is a task where a mistake means ruin.

Only long time operators with years of apprenticeship are permitted to handle the shrinking operation—one of the reasons Orr Felts always meet exact specifications for quality and size. Next time, specify Orr Felts, get the benefit of long felt life and maximum water removal.

Orr Felt & Blanket Co.
PIQUA, OHIO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With jumbo rolls and a CAMACHINE you can do a profitable roll paper business. Write for details.
Slitting and Roll-Winding Machine Headquarters
CAMERON MACHINE COMPANY
61 Poplar St. BROOKLYN, N.Y.

Imports of Paper and Paper Making Stock

Giving Manifests of New York, Boston, Philadelphia and Other Ports of Newsprint, Wrapping, Writing, Coated, Blotting, Tissue, Strawboard; Bleached Sulphite More Acute—Some Grades of Old Waste Lower.

Effective September 30, 1939, under Treasury Decision 49,970, all publications, exchanges and trade associations, were denied access to import manifests at the New York Customs House. The Paper Trade Journal and other interested parties have vigorously protested this ruling, and as soon as the order of the Treasury Department is modified or rescinded, full publication of all manifests will be resumed in these columns. In the interim, the Paper Trade Journal is making every possible effort to gather all available information from manifests, at various outside sources.

NEW YORK IMPORTS

WEEK ENDING JANUARY 18, 1941

SUMMARY

Stencil Paper.....2 cs.
Paper Cloth.....10 cs.

STENCIL PAPER

Ensign Manfg. Co., ——, Havana, 2 cs.

PAPER CLOTH

Mitsui & Co., Ltd., ——, Osaka, 10 cs.

RAGS, BAGGINGS, ETC.

W. Steck & Co., Inc., ——, Buenos Aires, 163 bls. old bagging.
Padawer & Co., ——, Shanghai, 100 bls. cotton waste.
E. C. Andres, ——, Shanghai, 250 bls. cotton waste.
Green Textile Associates, ——, Shanghai, 50 bls. picker waste.

GLUESTOCK

Darmstadt Scott & Courtney, ——, Buenos Aires, 59 bls.
Chemical Bank Trust Co., ——, Montevideo, 25 bls.

BOSTON IMPORTS

WEEK ENDING JANUARY 18, 1941

Green Textile Associates, ——, Shanghai, 50 bls. fly waste.
E. C. Andres, ——, Shanghai, 950 bls. cotton waste.

LOS ANGELES IMPORTS

WEEK ENDING JANUARY 18, 1941

——, ——, Yokohama, 2 pkgs. hanging paper, 2 cs. rice paper.
——, ——, Ocean Falls, 2,093 pkgs. newsprint.

Pulp Sales Corp. Changes

The Pulp Sales Corporation, 230 Park avenue, New York, announces that E. E. Barrett has resigned as president, due to his contemplated entry into other activities.

The corporation also announces that Ernest Erickson, formerly vice-president, has been appointed president of the Pulp Sales Corporation to fill the vacancy created by Mr. Barrett's resignation; V. Ramsay, formerly secretary-treasurer, has been appointed vice-president and treasurer, and Robert E. Krudener, formerly sales manager for the Middle-Western territory, has been appointed secretary. Robert E. Krudener will continue his headquarters in Kalamazoo, Mich., to serve Middle-Western territory, including Wisconsin and Minnesota.

H. M. Grasselt Goes with Collins Mfg. Co.

Herman M. Grasselt, who has been connected with the Erving Paper Mills, Erving, Mass., since 1937, resigned his position to rejoin the Collins Manufacturing Company, North Wilbraham, Mass., as production manager.

His former connection with Collins extended from 1927 to 1937. The late S. R. Whiting, then president of the concern, hired him in 1927 to install a cost and production control system and later on made him purchasing agent and production manager, successively. In 1935, Mr. Grasselt was made general manager, which position he held until his resignation in 1937.

While with the Collins Manufacturing Company, he was instrumental in the development of some of their lines and specialties, and upon his return will concentrate upon and assist in further research along these lines.

Mr. Grasselt has contributed for many years to Trade papers and other publications, articles on costs, production and mill management. He studied in Dresden and Cologne and after one year in Amsterdam, Holland, as export manager and foreign language correspondent for a paper export house, started in 1914 practical paper mill work in several New England mills. In 1915 he entered the employ of the Crocker-McElwain Company, Holyoke, as plant clerk. In 1916 he joined the American Writing Paper Co., where subsequently he held positions as cost accountant, office manager, superintendent and mill manager.

He resigned in 1925 and traveled for a mill supply house until he joined the Collins Manufacturing Company, in 1937.

With the addition to their staff, the Collins Manufacturing Company will continue and enlarge its program of improvements to plant and products.

Heads Greater Boston Community Fund

BOSTON, Mass., January 20, 1941—In the drive of the Greater Boston Community Fund 1941 Campaign, the Graphic Arts Group, of which James M. Howard of the A. T. Howard Company, printers, is chairman, has a quota of $60,000, allocated to sixteen groups. Frederick G. Lockwood, of Knight, Allen & Clark, Inc., is chairman of the Paper Industry Group, with a quota of $10,000. Harlow M. Russell, 2nd, of the Russell Box Company, Medford, is chairman of the Paper Converters Group, with a quota of $3,000. The drive begins today and last about twelve days. The total amount to be raised is just short of $5,000,000, the largest community fund in the United States.

Paper Box Shipments Rise

Shipments of folding boxes into the Metropolitan New York area by members of the Folding Paper Box Manufacturers Association amounted to $787,989 in December compared with $752,743 in November and $723,231 in December, 1939.

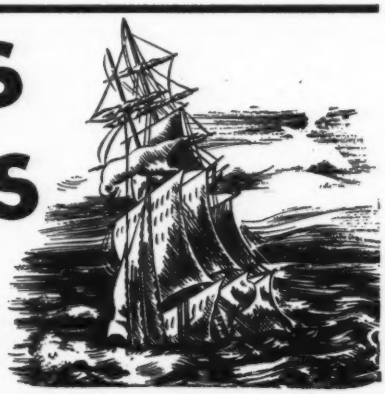
for SCREENS KNOTTERS CONSISTENCY REGULATORS WRITE!

TRIMBEY MACHINE WORKS
GLENS FALLS, N.Y.

Also made in Canada by FOSTER-WHEELER, LTD., ST. CATHERINES, ONT.

WATCH FOR ANNOUNCEMENT ON TRIMBEY-WALKER WHIRLPOOL RIFFLER

Not TORPEDOES *but* TEREDOS



caused the sinking of this ship! Seafaring men of early days considered teredos their worst enemies because there was absolutely no protection against the ravages of these tiny heterophytes.*

*Heterophyte: Any dependent organism which derives its sustenance from dead organic matter, or at the expense of some other living organism . . . as "parasite" which means literally, "eating at the table of another," or, as "slime forming microorganisms,"— uninvited guests which "eat at the table of the paper manufacturer."

ARE HETEROPHYTES UNINVITED GUESTS AT YOUR TABLE?

Slime forming organisms bite the hand that feeds them—these heterophytes fatten on the pulp that makes your paper—then they cause heavy production losses, lower quality paper and high stock losses!

BUT—you can protect yourself against heterophytes—with chlorine and ammonia, controlled with W&T apparatus! Over 300 leading mills have profited by using the W&T method of destroying slime forming organisms . . . the cost—1½ to 10c per ton of product!

Are you posted on the spectacular new development of "BREAK-POINT" Chlorination? If not, send for your copy of the new W&T reprint "Microbiological Control in Pulp and Paper Manufacture." It contains discussions of the latest paper mill practices in slime prevention and microbiological control.

WALLACE & TIERNAN CO., Inc.
Manufacturers of Chlorine and Ammonia Control Apparatus
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Other W&T Services:
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New York Paper and Pulp Market Review

More Active Paper Market Expected As Current Trade Reports Indicate Uptrend and Broader Demand Should Set In Before Long — Pulp Market Easy and Unchanged — Mixed Paper Firmer

Office of the PAPER TRADE JOURNAL,
Wednesday, January 22, 1941.

A somewhat firmer market with indications of an increasing demand for paper and paper products, is reflected in reports received from many manufacturers' representatives, jobbers, and general paper merchants this week. The pace of general business activity is steadily increasing and in some quarters of the market the opinion is expressed that business is likely to rise higher than has been generally forecasted. Current activity is most marked in retail sales, but wholesale markets are reported at this date as more firm and reflecting in some degree the uptrend in general industrial and trade activity.

The index of general business activity rose to 123.5 per cent for the week ended January 11, compared with 122.6 per cent for the preceding week, and with 110.6 per cent for the corresponding week last year.

Paper production for the week ended January 11 was estimated at 88.4 per cent, compared with 92.7 per cent for 1940, with 80.3 per cent for 1939, with 62.3 per cent for 1938, and with 90.2 per cent for the corresponding week for 1937.

Paper board production for the week ended January 11 was 77.0 per cent, compared with 74.0 per cent for 1940, with 62.0 per cent for 1939, with 52.0 per cent for 1938, and with 79.0 per cent for the corresponding week for 1937.

Reports from the wholesale market this week indicate that the improvement in demand is broadening out to include many grades of paper. The market, as a whole, is firmer, with the trade reflecting more optimism as to the future. No important change from prevailing market quotations has been reported at this date.

Mechanical Pulp

Production of mechanical pulp is reported at a relatively high level. Demand continues little changed from the preceding week and prices remain unchanged.

Chemical Pulp

No important change in prices or activity has been reported in the chemical pulp market this week. Good grades of unbleached sulphite and unbleached kraft continue to be reported scarce.

Rags

Demand for new cotton rags is reported good with mills steadily buying a good tonnage in preferred grades. No change from prevailing market quotations has been reported this week.

Trading in roofing rags is active at this date, with no important change in prices.

Old Rope and Bagging

Mill buying of old Manila rope continues steady and the tone of this market is strong, under the influence of a good demand and limited supplies.

Trading in old bagging continues good and this market is quite strong under the influence of limited supplies. No important change from prevailing market prices has been reported at this date.

Old Waste Paper

The paper stock market is reported steady under a good demand for the mixed grades. Prices on No. 1 mixed paper are firmer this week, with some quarters of the trade expecting an upward revision in prices soon, when board mills step-up production.

Twine

No important change in the twine market has been reported this week. Prices on all standard grades of hard and soft fiber twines are firm, with no changes reported during the current week.

Charge Price Conspiracy

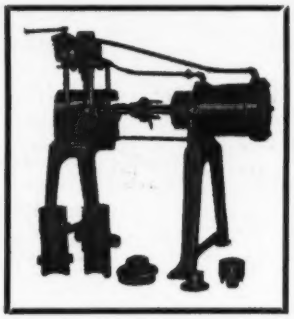
WASHINGTON, D. C., January 20, 1941—The Milk Cap Statistical Bureau of Philadelphia and twelve manufacturers representing more than 75 per cent of the total business of the paper disc milk bottle cap industry have been charged by the Federal Trade Commission with conspiracy to prevent price competition and restrain trade.

The bureau is alleged to have issued a "jobber rating book" for the use of its member companies which, for the purpose of fixing prices and discounts allowed jobbers, classified and rated all jobbers purchasing 350,000 of more bottle caps annually and a "dairy rating book" classifying dairies in groups using 25,000,000; 12,000,000 to 25,000,000, and 5,000,000 to 12,000,000 caps annually.

The bottle cap manufacturers who belong to the bureau are: Atlas Paper Box Company, trading as Atlas Bottle Cap Company, Chattanooga, Tenn.; Great Lakes Bottle Cap Company, Detroit; Robert S. Leonard Company, Kansas City, Mo.; I. Levingston Company, San Francisco; Fowler E. Macy and Edna B. Macy, trading as Fowler E. Macy Company, Converse, Ind.; Mid-west Bottle Cap Company, Belvidere, Ill.; National Manufacturing Company, Kansas City, Mo.; Ohio Bottle Cap Company, Paqua, Ohio; Piqua Cap Company, Piqua, Sealright Company, Inc., Fulton, N. Y.; Smith-Lee Company, Inc., Oneida, N. Y., and Standard Cap and Seal Corporation, Chicago.

To Broadcast "Paper and Printing"

The American Paper and Pulp Association, E. W. Tinker, executive secretary, has announced that by the courtesy of the Republic Steel Corporation the story of "Paper and Printing", in a dramatic form will be broadcast in Spanish to South American countries on January 28, between 8 and 8.30 P.M., Eastern standard time, from station WGEO, on a wave band of 9530 kilocycles.



Core Cap Remover

U. S. Patent No. 1692274

A simple and efficient machine for removing metal caps from paper cores. Compressed air is used and operation is controlled by a single valve. Additional die equipment is available to recondition caps after removal.

Bulletin will be sent on request.

Montague Machine Company
Turners Falls, Mass.

APPLETON WIRES are GOOD WIRES

APPLETON WIRE WORKS, INC.
APPLETON, WIS.

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL,
Wednesday, January 22, 1941.

BLANC FIXE—Prices on blanc fixe are firm and unchanged and conform to prevailing market levels. The pulp is currently quoted at $35 per ton, in barrels, at works; the powder is currently quoted at $50 per ton, f.o.b., works. Demand reported moderate for the week.

BLEACHING POWDER—Quotations on bleaching powder are firm. Demand reported steady for the week. Bleaching powder is currently quoted at $2 per 100 pounds, in drums, at works.

CASEIN—Prices on casein are firm, with prices unchanged for the current week. Standard domestic casein, 20-30 mesh, is currently quoted at 13 cents per pound; 80-100 mesh, at 13½ cents per pound. All prices in bags, car lots. Argentina casein, 20-30 mesh, is currently offered at 12½ cents per pound. No quotations on French casein.

CAUSTIC SODA—Quotations on caustic soda are firm and continue unchanged at prevailing market prices. Shipments reported fair. Solid caustic soda is currently quoted at $2.30 per 100-pounds; flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Prices on china clay are firm and conform to prevailing market levels. Demand reported moderate at this date. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay at from $12 to $22 per ton, at mines. Imported clay is currently offered at from $13 to $25 per ton, ship side.

CHLORINE—Quotations on chlorine are firm and unchanged. Market firm. Demand reported good for the current week. Chlorine is currently quoted at $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—The rosin market is reported firm for the week with prices lower on some grades. "G" gum rosin is currently quoted at $1.68 per 100 pounds, in barrels, Savannah "FF" wood rosin is currently quoted at $1.64 per 100 pounds, in barrels, New York. Seventy per cent gum rosin size is quoted at $2.42 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm and nominal. Shipments steady. Domestic salt cake is currently quoted at $17 per ton, in bulk; chrome cake at $16 per ton. All prices in car lots, f.o.b., shipping point. The quotation of $16.50 per ton on imported salt cake is nominal.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market levels. Demand reported moderate for the week. Prices on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are firm and continue unchanged for the current week. Pearl is currently quoted at $2.95 per 100 pounds; powdered starch at $3.05 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Demand reported steady for the current week. The commercial grades are currently quoted at $1.15; iron free at $1.60 per 100 pounds. All prices in bags, car lots, f.o.b., works.

SULPHUR—Prices on sulphur are firm and conform to prevailing market levels. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $19 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $15 to $21 per ton, at mines. No quotations on imported talc.

MARKET QUOTATIONS

Paper

(Delivered New York)

News, per ton—			
Roll, contract	$50.00	@	—
Sheets	58.00	"	—
Kraft—per cwt.—Delivered Zone A			
Northern, Extra Quality	$5.25	@	$5.75
Superstandard	4.87½	"	5.25
Northern Standard Wrapping	4.37½	"	4.62½
Standard Wrapping	4.25	"	—
Tissues—Per Ream—Carlots			
White No. 1	.97½	"	—
White No. 1 M. G.	.95	"	—
White No. 1½	.80	"	—
White No. 2	.75	"	—
Anti-Tarnish M. G.	.80	"	—
Colored	.85	"	—
Kraft	.87½	"	—
Manila	.77½	"	—
Unbl. Toilet, 1 M.	3.75	"	—
Bleached Toilet	5.26	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.10	"	—
Bleached, Jr.	3.60	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	8.25	@	10.25
No. 1 Manila Wrapping, 35 lb.	5.25	"	—
No. 2 Manila Wrapping, 35 lb.	5.00	"	—
Boards, per ton—			
News	35.00	@	40.00
Chip	35.00	"	40.00
Sgl. Mla. Ll. Chip	52.50	"	55.00
White Pat. Coated	65.00	"	67.50
Kraft Liners	55.00	"	—
Binders Boards	73.00	"	80.00

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds		Ledgers
100% Rag Ext. No. 1	$39.10@$46.00		$40.25@$47.25
100% Rag	31.05 " 36.50		32.20 " 37.75
85% Rag	.... "		29.90 " 35.00
75% Rag	23.60 " 27.75		24.75 " 29.00
65% Rag	.... "		21.65 " 26.25
50% Rag	17.55 " 21.50		18.70 " 22.75
25% Rag	14.65 " 17.75		15.80 " 19.25

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds		Ledgers
No. 1	$9.35@$11.50		$11.55@$12.75
No. 2	8.50 " 10.25		9.65 " 11.75
No. 3	8.05 " 9.25		9.20 " 11.25
No. 4	7.70 " 9.50		8.90 " 10.75

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper.

Delivered in Zone 1:

No. 1 Glossy Coated	$11.90	@	$13.50
No. 2 Glossy Coated	10.35	"	11.75
No. 3 Glossy Coated	9.55	"	11.00
No. 4 Glossy Coated	9.15	"	10.50
No. 1 Antique (watermarked)	9.05	"	10.50
No. 2 Offset	8.40	"	9.75
A Grade E. F.	8.20	"	9.50
A Grade S. & S. C.	8.45	"	9.75
B Grade E. F.	7.65	"	8.75
B Grade S. & S. C.	7.90	"	9.00
C Grade E. F.	7.35	"	8.50
C Grade S. & S. C.	7.60	"	8.75
D Grade E. F.	7.10	"	8.25
D Grade S. & S. C.	7.35	"	8.50

Ivory & India at $.50 cwt. extra.

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	No prices		
Dry	No prices		
(Delivered)			
No. 1 Domestic and Canadian	40.00	@	42.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	3.72½	@	3.87½
Prime Qualities—			
Easy-Bleaching Sulphite	3.17½	"	3.75
Strong Unbleached Sulphite	3.17½	"	3.75
News Grade, delivered			
Unbleached Sulphite	58.00	"	63.75
(On Dock, Atlantic Ports)			
Kraft Bleached	4.12½	"	—
Kraft Light & Strong	3.50	"	3.90
Kraft No. 1	3.40	"	3.80
(F. o. b. Pulp Mill)			
Kraft Domestic and Canadian	2.75	"	3.37½
(Delivered)			
Soda Bleached	3.30	"	—

Add 60 cents per short ton, dock charges for Albany; $2.50 for Lake Ports East and $3.50 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	6.75
Silesias No. 1	4.50	"	4.65
New Unbleached	6.25	"	6.50
Blue Overall	4.15	"	4.50
Fancy	3.25	"	3.50
Washables	2.00	"	2.15
Mixed Khaki Cuttings	2.75	"	3.00
O. D. Khaki Cuttings	3.00	"	3.15

Old Rags

White, No. 1—			
Repacked	3.50	"	3.65
Miscellaneous	2.75	"	3.00
White, No. 2—			
Repacked	2.50	"	2.75
Miscellaneous	2.00	"	2.25
Thirds and Blues—			
Repacked	1.50	"	1.65
Miscellaneous	1.10	"	1.25
Roofing Rags—			
No. 1	1.15	"	1.20
No. 2	1.00	"	1.05
No. 3 (bagging)	.90	"	1.00
No. 4	.60	"	.65
No. 5A	.60	"	.65

Foreign Rags

All prices nominal.

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—

THE DRAPER FELTS

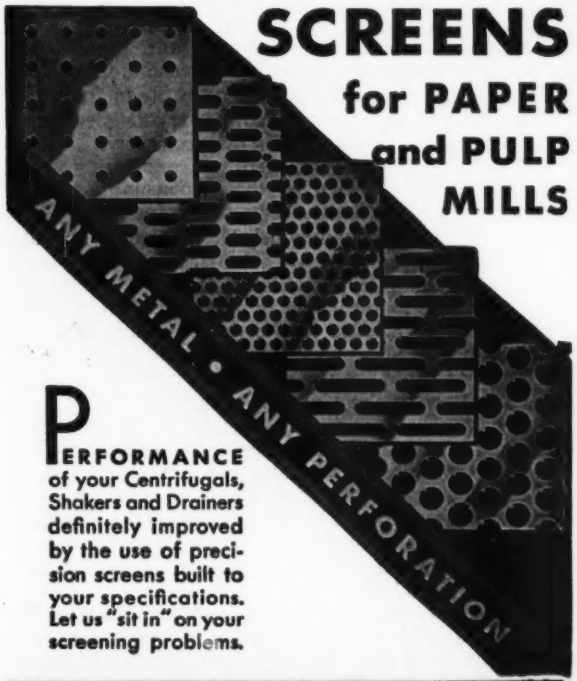
All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

DRAPER BROS. COMPANY

CANTON, MASS.

Woolen manufacturers since 1856



SCREENS for PAPER and PULP MILLS

PERFORMANCE of your Centrifugals, Shakers and Drainers definitely improved by the use of precision screens built to your specifications. Let us "sit in" on your screening problems.

The Harrington & King PERFORATING Co.

5652 FILLMORE ST., CHICAGO—114 LIBERTY ST., NEW YORK

THE outstanding success of Witco carbon blacks is due in no small part to the company's research activity in improving the quality of this product and adapting it to the changing needs of industry. This activity today continues on an even more intensive and extensive scale.

In Wishnick-Tumpeer's new research laboratory, completely air conditioned and equipped with the finest facilities, our staff strives constantly to increase the efficiency of carbon black and to promote, through skilled laboratory cooperation, profit and economy for customers using this important material.

WISHNICK-TUMPEER, INC.

MANUFACTURERS AND EXPORTERS

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New York, 295 Madison Ave. • Boston, 141 Milk St. Chicago, Tribune Tower • Cleveland, 616 St. Clair Ave., N. E. • Dallas, Texas, 610 Dallas National Bank Building • Witco Affiliates: Witco Oil & Gas Company • The Pioneer Asphalt Company • Panhandle Carbon Company • Foreign Office, London, England

BUY DIRECT AND PROFIT DIRECTLY

No. 4 White Linens.	2.25	@	3.25
No. 1 White Cotton.	4.25	"	4.75
No. 2 White Cotton.	3.25	"	3.75
No. 3 White Cotton.	2.50	"	3.00
No. 4 White Cotton.	1.90	"	2.20
Extra Light Prints..	2.00	"	2.40
Ord. Light Prints...	1.75	"	2.15
Med. Light Prints...	1.55	"	1.95
Dutch Blue Cottons.	2.25	"	2.50
French Blue Linens.	3.00	"	—
Checks and Blues...	2.00	"	—
Linsey Garments....	1.90	"	2.00
Dark Cottons.....	1.50	"	1.60
Old Shopperies.....	1.30	"	1.45
New Shopperies.....	1.45	"	1.50
French Blues	2.25	"	2.50

Old Rope and Bagging

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	2.50	@	2.75
Wool Tares, light....	2.00	"	2.25
Wool Tares, heavy..	2.12½	"	2.25
Bright Bagging	2.25	"	2.50
Manila Rope—			
Foreign	5.25	"	5.50
Domestic	5.25	"	5.50
Jute Threads.....	2.75	"	3.00
Sisal Strings	2.10	"	2.35
Mixed Strings.....	1.10	"	1.20

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	3.10	@	3.25
Ordinary Hard White No. 1....	2.25	"	2.50
Soft White No. 1..	1.80	"	1.90
Soft White Extra..	2.50	"	2.60
Flat Stock—			
Stitchless	1.10	"	1.25
Overissue Mag.....	.90	"	1.00
Solid Flat Book...	.80	"	.85
Crumbled No. 1...	.70	"	.75
Ledger White Stock.	1.70	"	1.75
Ledger Stock Colored	1.30	"	1.40
Manila—			
New Env. Cut....	1.70	"	1.80
New Cuttings.....	1.30	"	1.40
Old Kraft Machine Compressed bales..	1.40	"	1.50
News—			
No. 1 White News	1.75	"	1.90
Strictly Overissue..	.70	"	.75
Strictly Folded....	.45	"	.50
Corrugated	.40	"	.45
No. 1 Mixed Paper..	.25	"	.30

Twines

(F. o. b. Mill)

(Soft Fiber)			
Coarse Polished—			
India	.18	@	—
White Hemp.....	.18	"	—
Fine Polished—			
Fine India	.22	"	—
Unpolished—			
Box	.16	"	—
Paper Makers.....	.13	"	—
Tube Rope.....	.14¼	"	—
Wall Paper.....	.16	"	—
Wrapping	.16	"	—
Soft Fiber Rope...	.14	"	—
Cotton	.24	"	—
(Hard Fiber)			
Medium Java.....	.10	"	—
Mex. Sisal	.09½	"	—
Manila	.23	"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1.	.07	@	.07¼
New White No. 2.	.03½	"	.04
Light Silesias.....	—	"	.04½
Silesias, No. 1....	—	"	.04
Black Silesias, soft	—	"	.03
New Unbleached..	.06	"	.06¼
Washable Prints...	.02¼	"	.02½
Washable No. 1..	—	"	.01½
Blue Overall.....	.04	"	.04½
Cottons—According to grades—			
Washable shredding	—	"	.01½
Fancy Percales....	—	"	.03
New Black Soft...	.02½	"	.02¾
New Light Seconds	—	"	.04
New Dark Seconds	—	"	1.50
Khaki Cuttings—			
No. 1 O. D.....	.03¼	"	.03¾
No. 2 Mixed.....	.01¾	"	.02
Corduroy	.01¼	"	.01½
New Canvas.....	.04½	"	.05
New Black Mixed.	—	"	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	"	3.00
Thirds and Blues—			
Miscellaneous	1.35	"	1.50
Repacked	1.55	"	1.65
Black Stockings (Export)	3.50	"	4.00
Roofing Stock—			
Foreign No. 1....	Nominal		
Domestic No. 1...	1.20	"	1.25
Domestic No. 2...	1.00	"	1.05
Roofing Bagging..	.90	"	.95

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	Nominal		
Domestic	2.25	@	2.50
Manila Rope.....	—	"	5.50
Sisal Rope.....	2.00	"	2.25
Mixed Rope.....	.75	"	1.00
Scrap—			
No. 1.....	2.55	"	2.75
No. 2.....	—	"	1.50
Wool Tares, heavy..	3.75	"	4.00
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	2.25	"	2.50

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.40	@	2.50
No. 2 Hard White	2.10	"	2.15
No. 1 Soft White.	1.90	"	2.00
No. 2 Soft White.	1.60	"	1.75
No. 1 Mixed.....	.90	"	1.00
Solid Ledger Stock..	1.90	"	2.00
Ledger Stock, white.	1.50	"	1.60
Ledger Stock, colored	1.10	"	1.15
No. 1 Books, heavy..	.80	"	.85
Manila Cuttings.....	1.75	"	1.80
Print Manila.....	.50	"	.55
Container Manila....	.40	"	.45
Kraft Paper.....	1.25	"	1.30
No. 1 Mixed Paper..	.25	"	.30
Straw Board Chip...	.30	"	.35
Binders Board Chip..	.30	"	.35
Corrugated Board...	.50	"	.60
Overissue News.....	.70	"	.75
Old Newspapers.....	.50	"	.55

BOSTON

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.75	@	3.00
No. 1 Soft White.	2.00	"	2.25
No. 2 Mixed.....	.75	"	.80
Solid Ledger Books..	1.50	"	1.75
Overissue Ledger Stock	1.75	"	2.00
Mixed Ledgers.....	1.50	"	1.75
No. 1 Heavy Books	1.10	"	1.20
No. 1 Books, Light..	.75	"	.85
Crumpled Stitchless Book Stock	.75	"	.85
Manila Env. Cuttings	1.85	"	2.00
Manila Envelope Cuttings, extra quality	2.35	"	2.60
White Blank News..	1.40	"	1.50
No. 1 Kraft.....	1.25	"	1.30
Extra No. 1 Kraft..	1.45	"	1.50
Mixed Papers.....	.30	"	—
Print Manila	.55	"	.60
Container Manila....	.60	"	.70
Old Newspapers.....	.50	@	.55
Paper Wool Strings.	.95	"	1.10
Overissue News.....	1.00	"	1.10
Box Board Chips....	.40	"	.45
Corrugated Boxes...	.45	"	.50
Kraft corrugated boxes	.85	"	.95
New Kraft Corrugated Cuttings	1.35	"	1.40
Screening Wrappers.	.70	"	.80

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	3.00	@	—
Domestic	2.75	"	3.00
Sisal Rope.....	2.50	"	2.60
Mixed Rope	.85	"	1.00
Transmission Rope—			
Foreign	2.50	"	2.75
Domestic	2.75	"	2.90
Soft Jute Rope.....	3.25	"	3.50
Manila Rope—			
Foreign	5.25	"	5.35
Domestic	5.50	"	5.75
Jute Carpet Threads	2.00	@	2.25
Bleachery Burlap....	4.00	"	3.25
Scrap Burlap—			
Foreign	2.60	"	2.65
Domestic	2.60	"	2.75
Scrap Sisal	2.50	"	2.60
Scrap Sisal for Shredding	2.30	"	2.65
Wool Tares—			
Foreign, Heavy...	2.75	"	2.80
Domestic	2.40	"	2.50
Aust. Wool Pouches.	2.75	"	3.00
New Burlap Cuttings	3.75	"	4.00
Heavy baling bagging	2.75	"	3.00
Paper Mill Bagging..	1.75	"	2.00
No. 2 Bagging.....	.75	"	.80

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints.	—	@	.03
Fancy Percales....	.04	"	.04¼
New White No. 1.	.06¾	"	.07
New Light Flannelettes	.05	"	.05¼
Canton Flannel, Bleached	.06¼	"	.06½
Underwear Cutters, Bleached	.06	"	.06½
Silesias No. 1.....	.05	"	—
New Black Silesias..	3.00	"	3.25
Red Cotton Cuttings	.04	"	.05
Soft Unbleached...	.06	"	.06½
Blue Cheviots.....	.04¼	"	.04½
Fancy	.02	"	.02½
Washable	.02	"	.02½
Cottons—According to Grades—			
Blue Overalls.....	.04¼	"	.04¾
New Black, Soft:.	.03	@	.03¼
Khaki Cuttings....	.02½	"	.03
O. D. Khaki.....	.02½	"	.03¼
Corduroy	.06¾	"	.07¼
New Canvas.....	.06¾	"	.07¼
B. V. D. Cuttings...	.06½	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—			
Repacked	2.75	@	3.75
Miscellaneous	2.40	"	2.60
White No. 2—			
Repacked	1.90	"	2.00
Miscellaneous	2.00	"	2.25
Twos and Blues.....	2.00	"	2.25
Old Blue Overalls...	1.60	"	2.00
Thirds and Blues....	1.50	"	1.75
Miscellaneous	1.25	"	1.35
Black Stockings.....	3.50	"	4.00
Roofing Stock—			
No. 1.....	1.20	"	1.30
No. 2.....	.95	"	1.00
No. 3.....	.85	"	.95

Foreign Rags

(F. o. b. Boston)

Canvas	.04¼	@	—
Dark Cottons.....	(nominal)		
Dutch Blues.....	(nominal)		
New Checks and Blues	(nominal)		
Old Fustians.....	(nominal)		
Old Linsey Garments.	(nominal)		
New Silesias.....	(nominal)		

CHICAGO

Waste Paper

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings....	3.15	@	—
No. 1 Hard White	2.50	"	2.65
No. 1 Soft White.	2.00	"	2.20
Ledger and Writings	.85	"	.95
Solid Books.....	.95	"	1.10
Blanks	1.50	"	1.60
Krafts	1.40	@	1.50
New Kraft Cuts....	1.60	"	1.75
Overissue News.....	1.00	"	1.10
Old Newspapers—			
No. 1 Folded News	.70	"	.80
No. 1 Mixed Paper	.40	"	.50
Roofing Stocks—			
No. 1.....	.95	"	1.00
No. 2.....	.85	"	.90

W. H. Fricker Made Vice President

R. S. Rowlett, who was elected vice-president of the Gummed Industries Association at the annual convention of that Industry held in Cleveland, Ohio, November 11 and 12, 1940 has been unable to fulfill the obligations of that office due to the very detailed functions delegated to him by his own company.

The board of directors, therefore, reluctantly voted to relieve Mr. Rowlett of the responsibilities associated with the office of vice-president for the 1940-41 term. They then unanimously designated as his successor, by record vote, W. H. Fricker of the M. D. Knowlton Company, Rochester, N. Y.

He brings to the office of vice-president a background of knowledge in the manufacture, sale and distribution of stay paper second to none in the industry. Delving into the pages of history of the stay paper business in the United States, the name of the M. D. Knowlton Company is definitely labeled "pioneer." They were among the first, if not the first company, to produce successfully and market stay paper in this country. They have long been identified with the peculiar problems associated with its production. They were the pioneers in developing stay paper producing equipment. Today, equipment of their manufacture is used by foremost producers.

"Bill" Fricker, as he is affectionately known by his associates in the gumming industry and among the trade, has long been regarded as one of the outstanding authorities on the production and manufacture of stay paper. His knowledge of the product, the problems associated with its production, and the intricacies of stay paper plant operations will bring to the Gummed Industries Association a fund of knowledge which it can tap from among the officer personnel of the Association.